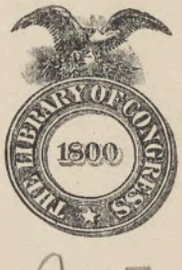

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MODERN GEOGRAPHY.

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Vol. I Before the Title.

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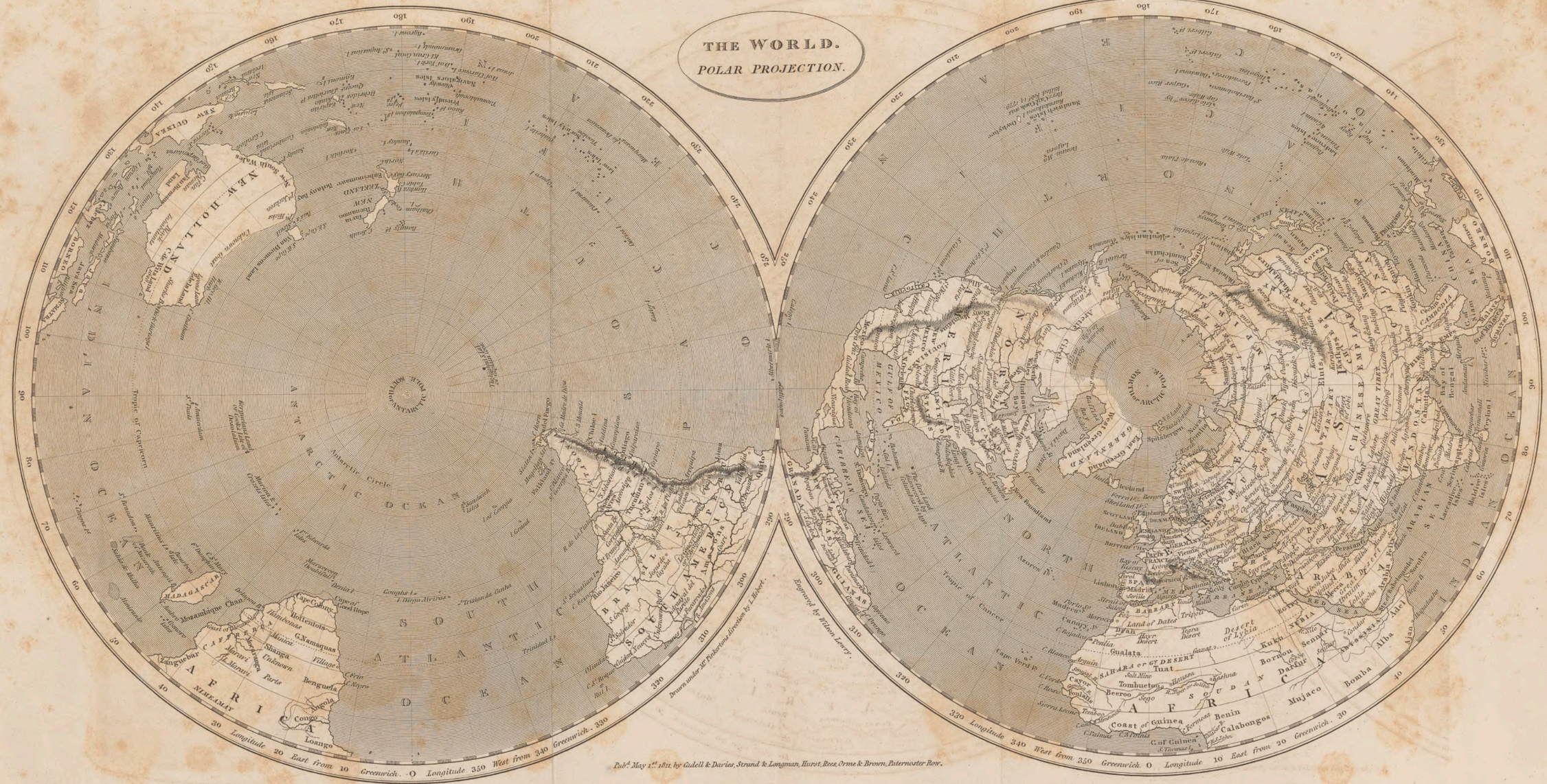

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5.C.

MODERN GEOGRAPHY.

A

DESCRIPTION

OF THE

EMPIRES, KINGDOMS, STATES, AND COLONIES;

WITH THE

OCEANS, SEAS, AND ISLES;

IN ALL PARTS OF THE WORLD:

INCLUDING THE MOST RECENT DISCOVERIES,
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VOL. I.—*EUROPE, AND PART OF ASIA.*

LONDON:
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1811.

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TO THIS EDITION.

THE publishers conceiving that an edition of this work in two volumes quarto would be more convenient for general use than the former, which was divided into three, this intention has been accomplished by a smaller type and greater compression. Some extracts, of little importance to the English reader, though useful in the foreign editions, as the works have not been translated into other languages, are here omitted; but in other respects the work has been rather enlarged, and has at the same time admitted some corrections and improvements *. The account of the most important Spanish colony in America, New Spain, which had remained in singular obscurity from the jealousy of its possessors, has in particular been almost written anew, the materials furnished by the recent interesting publications of the travels of Humboldt and Pike having far surpassed all the former information concerning this grand and opulent province. Important additions will also be found in the description of the various colonies in South America. Of the recent revolutions in the Spanish colonies, few memorials that can serve the extreme accuracy of history have yet been received; but it appears that, under a sincere or simulated allegiance to Ferdinand the Seventh, they have all withdrawn their adherence to the parent country, except New Spain, which seems to await the assistance of the United States.

From a recent publication it appears that Tonquin, Cochin China, and some adjacent realms, are now united into one empire like that of the Birmans.

This work being originally founded upon the ancient, and, in many instances, natural divisions of Europe, it has been regarded as beneath the dignity of the science to render it an almanac of the recent fluctuations in the divisions of states, the more especially as it has already been adduced in favour of concessions, which can only be regulated by a general peace; our adversaries affecting to confound the voice of an individual with that of the government or nation. The description of the United Kingdom of Great Britain and Ireland has been retouched and corrected in several parts, chiefly from notes communicated by learned correspondents: but the account of a recent discovery in the Isle of Skey did not appear till the impression was nearly completed. The description is conveyed in a style of such singular affectation, that the object is only seen as through a mist. It appears, however, that in the year 1808 there was discovered in the S. E. angle of the Isle of Skey a beautiful cave, about two hundred and fifty feet in depth, clothed with stalactites and stalagmites of white marble, in the form of pillars, statues, &c. so as to rival the famous grotto of Antiparos.

The accounts of Russia, and some other European countries, have been improved by extracts from German authors little known in this country. A learned traveller of great celebrity also kindly imparted his copy of the former edition in three volumes, with his notes on many countries which he had visited in Europe, Asia, and Africa.

The astronomical introduction to this work by the learned Dr. Vince having been found too extensive, and abundant in topics not strictly connected with geography, it has, at the request of many readers, been supplied by that of Lacroix to the French edition, which is universally acknow-

* Three new maps have also been inserted.

ledged

ledged to be the ablest and most appropriated which has yet been prefixed to any geographical system. He may perhaps, however, have improved or augmented it in the new and splendid edition of this work about to be published at Paris, with the notes of many eminent literati, as it has been ordered to be used in all the military academies of the empire *. The present translation is from the former French editions; and the name of the translator is a sufficient recommendation of his accuracy and consummate skill in the subject.

In the projection of maps some improvements were suggested by Murdoch, whose plan appeared about fifty years ago in the Philosophical Transactions. Some were also eſtimated by Euler and Lambert, both geometricians of the first rank. Lambert was a member of the Royal Academy at Berlin, where he died in 1775. One of his last works was his Letters on Cosmogony, published about 1765, probably in the German language. The French translator altered the form, reducing them to a regular plan in distinct chapters; and of the latter an English translation appeared in 1800, 12mo. This little wórk, intended to be of a popular nature like Fontenelle's Plurality of Worlds, has the advantage of being founded on Newtonian principles, combined with the most recent discoveries, and the most profound geometrical demonstrations, while Fontenelle's, as is well known, is founded on the reveries of Descartes. Some of the most striking features of this work of Lambert are his ideas concerning the position of this our solar system with regard to the universe, and his doctrine concerning comets. The recent appearance of two remarkable comets in the space of a few years, and the numbers observed by Herschell's great telescope, will lend additional interest to his ideas on this singular subject, and if they were just, instead of planetary systems we should speak of cometary systems. As the work is

* That there is an enlarged edition of this introduction by M. Lacroix would appear from the following notice which the author has just received from Paris, dated 1st July 1811, announcing the appearance of the first volume of this new edition, with illustrations by some of the most learned men in France.

" Geographie Moderne, rédigée sur un nouveau Plan, ou Description historique, politique, civile, et naturelle, des Empires, Royaumes, Etats, et leurs Colonies, avec celles des Mers et des Iles de toutes les Parties du Monde, par *J. Pinkerton* et C. A. Walckenaer, revue, corrigée, et considerablement augmentée, principalement d'Articles sur les Langues, par *L. Langlès*, Membre de l'Inſtitut, l'un des Administrateurs-Conservateurs de la Bibliothèque Impériale, etc. Précédée d'une Introduction à la Géographie mathématique et critique, et à la Géographie physique, ornée de Cartes et Planches, par *S. F. Lacroix*, Membre de l'Institut et de la Légion d'Honneur, etc.; suivie d'un Précis de Géographie ancienne, par *J. D. Barbié du Bocage*, Membre de l'Institut, Professeur de Geographie et d'Histoire à l'Université Impériale, etc.; accompagnée d'un Atlas Grand, in folio, dressé par *P. Lapie*, Ingenieur-géographe, d'apres les Autorités les plus récentes; avec un Liste des meilleurs Cartes et Livres de Voyages. Tom. 1. in 8vo.

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full of new and sublime ideas concerning the universe, regarding which and its great Creator the most sublime ideas must be the most veracious, and has remained in singular obscurity, translations from the German being little known at the time when it was published; his discussion concerning the number of comets shall be laid before the reader, whom it may instruct by its truth, elevate by its grandeur, or amuse by its imagination.

" NUMBER OF COMETS. [Part I. ch. 5.]

" The history of the heavens, or, which is the same thing, of astronomical observations, informs us that the number of comets exceeds that of the planets. Halley's table, in which we only find the comets whose course had been observed to his time, contains 24, but which we ought to reduce to 21, because two of them make properly but one, which appeared twice: and three others, in the same manner, make but one, which appeared at three different periods.

" Amongst these twenty-one, we have two only whose perihelion is farther removed from the Sun than the mean distance of the Earth: all the remaining nineteen have it between the Earth and the Sun: two of these last pass between the Earth and Venus, eleven between Venus and Mercury, six between Mercury and the Sun.

" A small degree of attention to the position of the earth, and that of her orbit, will convince us, that the comets which shew themselves to us are nothing compared with those that escape our observation.

" The comets which descend below Mercury are almoſt all visible, either as they approach their perihelion, or as they ascend towards their aphelion. The only case in which they may conceal themselves, is when the extended part of their orbit lies beyond the Sun, relatively to the Earth, and when they have at the same time a southern latitude in the situations where otherwise they might be visible. Then they are scarcely to be observed, except on the other side of the equator. In our climates they skulk under the horizon at the time we should have the best chance of observing them.

" We see likewise such as pass between Mercury and Venus with great ease. Their light is extremely vivid; their enormous tail draws out still more in length on their approach to the Sun, as was observed to be the case with that of 1744; and their progress round him occupies the space of some months, a period sufficient to enable us to observe them, either in the evening or the morning, whatever be the Earth's position in relation to them and the Sun.

" The case of comets, whose perihelion is as remote from the Sun as our Earth, or at a still greater distance, is quite different; they have a fainter light and the tail is shorter; near the Earth their apparent motion is extremely rapid, insomuch that they move at the rate of ten, and sometimes twenty degrees a day and even more. They continue visible only during some days, or at most some weeks: besides it is necessary that the earth should be in the most favourable position in regard of the comet. Their size quickly diminishes, and they hasten to withdraw from our view. The comets of this order, provided we assign them long ellipses, would employ between their departure and their return a period that must be measured by ages.

" We may rank in this class almost all the comets which shine for a few nights only; a space frequently too short to afford us an opportunity to determine their orbits. Some of them escape us during thick hazy weather, and once they are out of view of the naked eye, it is a matter of the greatest accident if we are able to catch them with the telescope.

" As the prodigious bulk of a comet's atmosphere darkens its lustre, it is hardly possible to see such as sojourn above the sphere of Mars; and even those which we have had time enough to observe, disappear as soon as they get to the height of that planet. The comet of the year 1759 passes five years in the sphere of Saturn, while we see it only about as many months. All this agrees perfectly with Halley's table, where we find but two comets out of twenty-one whose perihelion is at a greater distance from the Sun than the earth is from the same body.

" This table being constructed on observations which we owe to accident, lays but a weak foundation for judging of the possible number of comets. If we suppose that, of all the comets

of our system, that of 1680 has its perihelion nearest the Sun, we can conceive five or six others equally near him, and twelve at double the distance. This is a moderate estimate; for there is nothing to hinder our making comets pass by hundreds, perhaps by thousands between Mercury and the Sun. Let us begin, however, by Halley's table, and compute from it the number of comets we may assign to the solar system.

" In order to restrict our terms still more, we will admit of no perihelion, beyond the regions of Saturn; though since Saturn's distance from the nearest fixed star exceeds his distance from the Sun, by more than fifty thousand times, we have no reason to confine ourselves for want of room.

" We require, in the second place, that the comets have such an arrangement as that they shall never meet nor disturb each other in their career. For this purpose their orbits must not intersect each other in any one point; and further, these orbits must not be regarded as geometrical lines; though we will conceive the sphere of each comet's activity to be so defined, as to restrain it from making irruptions into the spheres of others, and committing such disorders as would unavoidably arise from violent aberrations.

" This being premised we proceed to our calculation: —

" If we consider, first, the six comets which Halley's table shews us between Mercury and the Sun, I would ask in what *ratio* we ought to suppose their number increases? At first sight we should imagine that it is in the *ratio* of the cubes of the distance of perihelions from the Sun, because we can thus distribute perihelions in each spherical space which we conceive about a given point; and this would answer, in fact, did the comets remain immoveable, constantly attached to their perihelions. But our second term requires that they should have the freedom of motion, and excludes the intersection of orbits; consequently it opposes an increase in the *ratio* of cubes, and reduces it to that of the squares of the distances.

" Though we had no right to expect that this law should exactly obtain in Halley's table, we nevertheless find it verified in respect of the comets which have their perihelions nearer the Sun than Venus; for the table gives seventeen comets between Venus and Mercury; and six between Mercury and the Sun; a difference which is nearly in the proportion of three to one, or in that of the square of the distance of those two planets from the Sun.

" The square of the distance of Saturn exceeds the square of the distance of Mercury about six hundred times; and consequently, if we every where place the perihelions at the same distances, we shall then have six times six hundred, or 3,600 perihelions with their comets in our system.

" But this number, deduced from Halley's table, is evidently by far too small, as may be easily shewn. Let us recollect, that we can see none of the comets which have their perihelions beyond Mars. The plane of Mars's orbit is forty times smaller than that of the orbit of Saturn; and therefore of these 3,600 comets, we could see a fortieth part only, that is to say, ninety. Now we learn from history and tradition, that the number of comets seen, (I do not say observed,) exceeds two hundred, without noticing meteors, which sometimes have been confounded with those bodies. On the other hand, if we consider how many comets may be supposed to have passed without observation, whether in the day-time, or in a clouded state of the skies, or by reason of their southern latitude: all these circumstances, I say, taken into account, we may boldly double two hundred in order to come at the number of those which fall within the field of our view. Such as have appeared more than once may be left out of the reckoning. Besides, that they are not seen every time they return, their return happens but very seldom, on account of the magnitude of the greatest part of the comet's orbits; probably there are comets which have appeared but once since the flood: in short, though their number was to be estimated much higher, it would be amply compensated by that of comets which escape our observation from the difficulty of finding them; for there scarcely passes a year when we should not see comets, did we know when to expect them.

" From the year 1500 to 1600, there appeared more than forty comets, not one of which has, it should seem, been seen again during this long period; hitherto we know of none except

that

that of 1759, whose revolution is less than a century. This would give us, for four centuries, 160 comets; let us deduct 60, if you please, for such as may have been seen more than once, there will remain a hundred. Upon the supposition that we see the third part only of those that might be seen, the triple of this number gives us three hundred. These three hundred taken forty times, that is to say, as often as the sphere of Saturn surpasses that of Mars, which sets bounds to the visibility of comets, will produce 1200, instead of 3,600, the number calculated from Halley's table. But we take things with a great abatement if we reckon only 300 visible comets; there is reason to believe that their number amounts to some thousands; at least the table by the different positions it assigns to orbits, and the chasms it leaves to be filled up, gives countenance to this opinion.

" The following is a more just estimate: —

" Taking for our basis the comet of 1680, whose perihelion was more than sixty times nearer the Sun than Mercury, we may place between Mercury and the Sun, the whole 3,600 perihelions which we had dispersed all the way to Saturn; for this number is precisely the square of 60. In this manner we shall have six hundred times as many within the bounds of Saturn; or in other words, above two millions. In short, as one may suppose, on the side of the perihelion of 1680, two or three similar perihelions, a very moderate estimate, will give motion in our solar system, to at least five hundred millions of comets.

" All these comets, agreeable to our hypothesis, would have their perihelions nearer the Sun than that of Saturn. But what is to prevent our conceiving others vastly more remote, even beyond the sphere of that planet? Space expands in proportion to its distance from the Sun; and likely it is in those far situated regions where float the comets of the larger size; comets, possibly, with satellites, whose enormous masses, and tremendous spheres of activity, forbid a nearer approach to the Sun, in whose bounds space is more confined, and requires to be managed with a sort of œconomy.

" How prodigious is the number of comets! What then becomes of the planets? They seem to be lost amidst the innumerable celestial orbs that surround the Sun. How small a part of our system is known! What a pitiful molehill is our earth; and, how insignificant are we — we who creep so proudly on its surface!"

In another passage he thus expresses himself: —

" It will be recollected, that by placing six perihelions only between Mercury and the Sun, we found 3,600 elliptic orbits between the Sun and Saturn. Here, however, we should scarcely find 150 circular ones.

" We easily perceive that the great inconvenience of circles is owing to this circumstance, that they must be concentric; an inconvenience which does not occur in the case of the ellipses; and so much the less in proportion as they are oblong, like those we have seen described by comets passing between Mercury and the Sun. For the Sun is not in their centre, but in one of their focuses. Hence it is, that we cannot only imagine several of an equal magnitude, but we may interlace them a thousand different ways, and make them diverge above, below, and on each side, towards all the regions of the world. In order to render the idea still more sensible, we have only to construct a sphere composed of elliptic bands or fillets, and compare it with another made of those of a circular form.

" It being then unquestionable that ellipses supply orbits in infinitely greater abundance than circles do, we will cease to be astonished that we should people the heavens with so many legions of comets; and instead of being surprised that the number of the planets is so small, we shall rather ask why we have any of them at all. One is disposed to imagine, that for the good of the world, not one of them should be suffered to exist. By what title, in fact, can we pretend to hold our place? We may alledge, for want of a better reason, that good order, and the regular variety of system, required that, among others, there should be globes whose inhabitants might enjoy a more equable temperature. Perhaps also, room was found for a few circles in

the interstices of the elliptic orbits, and we are here only by way of filling up the empty stowage *.

The tendency of astronomy to enforce the most ardent devotion, and the most sublime ideas of the Supreme Being, is well illustrated by our ingenious author. Having combated the notion entertained by some, that the planets of our system were originally comets, he observes, that these sixteen comets could never have wandered from their ancient paths in the precise manner that was necessary, in order to their entering new orbits, situated in the same plane, and in a plane which is in common to them with the Sun's equator. Nothing here savours of chance; every thing indicates design and regulation. The heavenly bodies are at this day what they were from the beginning. The tribute to the immortal Newton also deserves transcription. " In a word, the whole agrees, and seems to be arranged conformable to our idea; reasons of physics and cosmogony tend equally to its confirmation. Here, then, is the triumph of the Newtonian law; so wonderfully does it coincide with the principles of cosmogony, which the Supreme Architect must have observed; with the order, the variety, the periodical motions of the heavenly bodies; and with the population of the solar system. It provides for every thing, and, probably, the whole taken together, constitutes a *maximum*, in which obtains the highest possible perfection.

" The same beautiful combination no doubt implies the motives of preference given to the law of gravitation over all others, in the organization of the world; motives which hitherto have not been fully unfolded. We see, in fact, the high prerogatives of this law above every other the imagination might suggest. If, for example, the heavenly bodies described, instead of ellipses, spiral lines; each spiral, not to mention other inconveniences, would occupy an entire plane, and its progress being impeded near the Sun, would not admit the intersection of other spirals. Still, however, this will not prove the necessity of ellipses; if ever this proof ſhall be discovered, it will probably be through the resources to which we have already referred.

" All those discoveries which have been, and in process of time may be made, exalt the glory of the immortal Newton, who derived this admirable law from the depth of his own genius. His name, for ever revered and sacred on earth, ought to soar through all the regions of space which he has measured; through all the globes which he has weighed; and be echoed in the music of the celestial spheres."

The curious reader may also wiſh to see the result of his speculations concerning the position of our solar system in the infinite space of the universe.

" Our earth belongs, by a chain of gradations, to several systems, and at last to the system of the universe: all the centres of those systems as well as the universal centre, exert their influence

* The comets of 1807 and 1811 have excited the attention of our journalists, who have retailed to the public antiquated ideas, irreconcileable with the recent progress of chemistry and other sciences. Even the immortal Newton could not foresee that progress, nor the differences lately observed between the rays that produce heat and those that produce light. Many ideal inferences are alſo obviated by natural facts, as the torrid zone, supposed to be uninhabitable, is on the contrary a region of rains, and of high mountains covered with perpetual snow. These reflections arise from the notions concerning the heat of the comet of 1680, which Lambert thus obviates: —

" According to Newton's calculations, the strongest heat of the comet of 1680 was two thousand times greater than that of red-hot iron; and it would have required a period of 50,000 years to cool it down to its former temperature. Something however may be objected to this calculation.

" 1ſt. The greatest degree of heat that red-hot iron is capable of acquiring is not so easily determined. All we can know is, that it will scarcely exceed four times the heat of summer.

" 2ndly, Newton did not extend his scale far enough on the side of absolute cold; a body which would take 50,000 years to cool ought to require the same time to heat it up to that point.

" In ſhort, bodies are susceptible of a limited degree of heat only; and iron once red-hot, if you still continue to expose it to an intense fire, vitrifies and crumbles into ashes. If then the comet of 1680 bore a heat two thousand times greater than red-hot iron, it must have consisted of matter entirely different from any we are acquainted with: none of which could have resisted a heat of such astonishing force."

over

over her. The whole of those centres then, ought, in respect of the Earth, to occupy a sensible space in the heavens; at least we have a right to suppose that we ought to see them with the telescope. Nothing but the inconveniences arising from the transmission of light, as detailed above, could intercept our view of them. For as to their magnitude, it is such as would be necessary to render them visible.

" Here then we have all the systems of the universe reduced to order, and enchased in one another. But what is our position amidst those systems? Where are we? As to this point we can speak indefinitely, negatively, and by approximation only.

" The Earth is not at the centre of the solar system. The Sun is not at the centre of his system of fixed stars; a centre which is either in the region of Orion or Sirius. This system is neither at the centre nor in the plane of the Milky Way, though it seems to project over it a little; the portion of this Way which it approaches the nearest, is that which passes by the colure of Capricorn, where its breadth is double. But where is the Milky Way itself in relation to other Milky Ways? Here ends all our science with the utmost stretch of our eyes and instruments."

It is hoped that the singularity and interesting nature of the subject will excuse these remarks, if rather digressive, and which have been excited by the mention of an author who has contributed to the more accurate projection of maps, and in consequence to the science of geography. Nor are they, at the same time, foreign to that portion of astronomy which belongs to this science, as formerly esteemed a part of Cosmogony, or the knowledge of the universe.

The author must conclude with general acknowledgements to several learned friends and correspondents, who have favoured him with their sentiments concerning additions, corrections, and improvements, which he is always ready to adopt with pleasure and gratitude. While the Inquisition of Spain has placed this work, with Blair's Sermons, in the list of those that are prohibited to be read, he has the satisfaction to find that it has greatly contributed to virtuous and solid instruction, which forms an important part of public morality. A recent traveller in Turkey informs us, that there is a traditional saying of Mahomet that " the ink of the learned is as precious in the eyes of God as the blood of the martyrs *," implying that works of instruction, by diverting thousands from idleness and profligacy, largely contribute to that public morality, which it is the chief end of religion to excite and establish. This consolation may shed flowers of celestial odour over the paths of literary labour.

Sept. 1811.

* See also D'Herbelot, p. 312.

PREFACE.

THE importance of geography as a science, and the exuberant variety of knowledge and amusement which it exhibits, are themes too trivial for argument or illustration. Eagerly attached to this study from his early years, the author always cherished a hope that he might contribute his labours to its advancement. For much remained to be done; and many literary men have long admitted, that great advantages might be derived from a new and improved system of modern geography, the latest popular works of this nature not only abounding with numerous and gross mistakes, but being so imperfect in their original plans, that the chief geographical topics have been sacrificed to long details of history, chronology, and commercial regulations, wholly extraneous to the very nature of such a design. When to this it is added, that the most recent and important discoveries are either omitted, imperfectly illustrated, or so defectively arranged as to embarrass and baffle the research of the most patient inquirer, there is no reason to be surprised at the general confession, that such compilations are only used because there is no better extant.

The successive discoveries in the Pacific Ocean, and other parts of the globe, have, within these few years, acquired such a certainty and consistency, that they may now be admitted and arranged in a regular and precise distribution of the parts of the habitable world; while the recent discoveries of La Perouse, Vancouver, and other navigators, nearly complete the exact delineation of the continental shores. No period of time could be more favourable to the appearance of a new system of geography, than the beginning of a new century, after the elapse of the eighteenth, which will be memorable in all ages, from the gigantic progress of every science, and in particular of geographical information; nor less from the surprising changes which have taken place in most countries of Europe, and which of themselves render a new description indispensable. Whole kingdoms have been annihilated; grand provinces transferred: and such a general alteration has taken place in states and boundaries, that a geographical work published five years ago may be pronounced to be already antiquated.

After a general war of the most eventful description, after revolutions of the most astonishing nature, Europe at length reposes in universal peace. The new divisions and

and boundaries no longer fluctuate with every campaign, but are established by solemn treaties, which promise to be durable, as at no former period has war appeared more sanguinary or destructive, and at the same time more fruitless even to the victors. These treaties not only influence the descriptions of European countries, but of many in Asia, Africa, and America.

A new system of geography is also specially authorized and authenticated, by the singular advantage of several important books of travels having appeared within these few years, which introduce far more light and precision into our knowledge of many regions. The embassies to China, Tibet, and Ava, for example, present fresh and authentic materials, without which recourse must have been had to more remote and doubtful information; and the Birman empire is unknown to all systems of geography. The Researches of the Asiatic Society, and other late works, diffuse a new radiance over Hindostan, and the adjacent countries. The labours of the African Society, the travels of Park, Browne, and Barrow, have given more precision to our imperfect knowledge of Africa: and the journies of Hearne and Mackenzie have contributed to disclose the northern boundaries of America. In short it may be safely affirmed, that more important books of travels and other sources of geographical information, have appeared within these few years, than at any period whatever of literary history.

In this work the essence of innumerable books of travels and voyages will be found to be extracted; and such productions have been the favourite amusements of the most distinguished minds, in all periods and countries, as combining the variety, novelty, and adventure, of poetical and romantic narration, with the study of man, and the benefits of practical instruction. It is unnecessary to repeat the names of Montaigne, Locke, Montesquieu, &c. or that of my late friend Gibbon, whose collection of voyages and travels formed the most chosen part of his library. Why did he not write geography! Why has a Strabo been denied to modern times!

Nor must the rapid advances of natural history be forgotten, which now confer such superior precision of the natural geography of most countries. Not only have zoology and botany received the greatest improvements; but geology and mineralogy have, within these twenty years, become entirely new and grand sciences; the substances being accurately arranged, and described with such clearness, that throughout the literary world they are exactly known and discriminated *.

Yet even with such advantages geography is far from being perfect; and the familiar exclamation of D'Anville in his old age may still be adopted: " Ah! my friends, there are many errors in geography †." This science may indeed be regarded as

* The present system of mineralogy was first established by Bergmann, in 1782; who was followed by Werner, 1789. Mr. Kirwan published an excellent work, 1794, two volumes, 8vo. and in general, within these ten years, this important study, so essential to national wealth and prosperity, has on the new principles been cultivated with surprising ardour and success.

† " *Ah! mes amis, il y a bien des erreurs en geographie.*"

imperfect

imperfect in its very nature, as no reasonable hope can be entertained that all the habitable lands shall, at any period of time, pass under a trigonometrical survey, the only standard of complete exactness. The chief defects are the interior parts of Africa, and many portions even of the shores; Tibet, and some other central regions of Asia, nay even Persia, Arabia, and Asiatic Turkey; the western parts of North America; and the Spanish settlements in that part of the new continent; with the central and southern parts of South America. Of New Holland little is known, except the shores: and many discoveries remain to be made in the Pacific Ocean, particularly the extent and interior part of New Guinea, and other large lands in that quarter. Even in Europe the geography of Spain and Portugal is very imperfect, though not so defective as that of European Turkey; nor can we loudly boast while, as Major Rennell informs us, there is no exact chart of the British Channel; and the trigonometrical survey, so far as it has extended, has detected gross errors in the maps of the counties *. We have indeed been generally more attentive to remote regions, than to our native country; and could a new system have been published with more advantages, than in the kingdom which has given birth to the greatest modern discoveries and improvements in geography.

The rapid progress of science has also, within a like short period, greatly improved the maps and charts of most countries, always to be ranked among the chief objects of geography; though unaccountably the compilers of modern systems seem to write without the inspection of any map whatever, or at least never make any reference of that nature. This is the more surprising, as accurate maps and charts may be said to form the very foundation of geographical knowledge. The author of the present work has been sedulous to discover the latest and best maps of all countries, in which research he has been liberally assisted by our best practical geographers. The small maps which accompany the work are drawn with great care, under the directions and revision of Mr. Arrowsmith, who is well known by the industry and attention which he employs in selecting the most recent and accurate materials and improvements. The smallness of the size will of course prevent them from supplying the place of a large and complete atlas; but they will be found to constitute an useful introduction to such a collection, as they are reduced from the best large maps, and the authorities added at the bottom, while they are illustrated with many important features of the countries, and interesting names, derived from works of natural and civil history, for which a large and expensive atlas may be consulted in vain †. The latter had best

* It is a lamentable circumstance that geography is at times retrogressive in some points, while it advances in others. Thus Preston's survey of the Shetland Islands represents them as one-third part too large, both in length and breadth, and there are gross errors in the positions. The mistake was detected in the important voyages ordered by the late King of France; and remedied in the Danish map, Copenhagen, 1787, but still more in that of Capt. Donnelly. These isles now appear nearly as in the maps preceding 1750. Preston's map of these remote British possessions has even occasioned shipwrecks: and the science and capacity necessary for such a survey ought to be the object of strict previous investigation. Many such instances might be given.

† A most ingenious artist, considerably imbued with mathematical knowledge, having invented machines which give more clearness and precision to the engraving of straight lines, the author, who had hitherto only seen this method employed in the representation of mathematical instruments, and machinery, was

best be formed by the reader himself, for which purpose a list of the best maps is given at the end of the second volume, affording materials for a selection of the great, of the middle, or of the small kind. To the first class, for example, may be assigned Cassini's map of France in one hundred and eighty-three sheets, Ferrari's map of the Netherlands, and others of a similar extent, more appropriated to public libraries and princely collections. To the second class may be referred maps of kingdoms, from eight or six to four sheets; while an atlas of the smallest size may include those from four to one sheet large folio; under which a collected atlas can be of no utility. Yet even of the latter a wonderful defect may be observed in the best private libraries, where, though a good atlas should form the first object of inquiry and expence, as being useful in reading almost every description of books, yet maps of the most antiquated and erroneous kind often appear; and even the literary investigator is satisfied with finding the name without exploring the fidelity of the general outline, or the accuracy of the positions.

With the advantages above enumerated, of new and important discoveries, of recent and authentic intelligence, and of the particular period of publication, there cannot be any great claim of merit in presenting a more complete system of geography, than has yet appeared in any language; for the Spaniards and Italians have been dormant in this science, the French works of La Croix and others are too brief, while the German compilations of Busching, Fabri, Ebeling, &c. &c. are of a most tremendous prolixity, arranged in the most tasteless manner, and exceeding in dry names, and trifling details, even the minuteness of our Gazetteers *. A description of Europe in fourteen quarto volumes may well be contrasted with Strabo's description of the world in one volume: and geography seems to be that branch of science in which the ancients have established a more classical reputation than the moderns. Every great literary monument may be said to be erected by compilation, from the time of Herodotus to that of Gibbon, and from the age of Homer to that of Shakspere; but in the use of the materials there is a wide difference between Strabo, Arrian, Ptolemy, Pausanias, Mela, Pliny, and other celebrated ancient names, and modern general geographers; all of whom, except D'Anville, seem under-graduates in literature, without the distinguished talents, or reputation, which have accompanied almost every other literary exertion. Yet it may

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was impressed with its peculiar fitness for the delineation of water. With this idea he applied to Mr. Lowry, the inventor, and the effect is now before the public in a series of maps, which may safely be pronounced to be not only unrivalled, but unexampled by any former efforts in this department. Not to mention superior richness and neatness, it is not only singularly adapted to the instruction of youth, by the instantaneous representation of the form and chief bearings of each country, but also facilitates consultation by the marked distinction between land and water, which enables the eye to pass more quickly to the other objects. The consultation of charts might be facilitated in a similar manner, while, in the usual contrast between maps and charts, the sea might be preserved white, and the lands distinguished by strokes not horizontal, which would resemble water, but vertical. In mineralogical maps the heraldic mode of engraving might be adopted.

* The geographical ephemeris of Zach, (*Allgemeine Geographische Ephemeriden,*) a monthly journal in the German language, embraced astronomy and geography, and has contributed to the advancement of both sciences. It is now conducted by Gaspari and Bertuch, and more strictly confined to geography; while Zach's new journal (*Monatliche Correspondenz*) relates chiefly to astronomy.

safely be affirmed that a production of real value in universal geography requires a wider extent of various knowledge than any other literary department, as embracing topics of the most multifarious description. There is however one name, that of D'Anville, peculiarly and justly eminent in this science; but his reputation is chiefly derived from his maps, and from his illustrations of various parts of ancient geography. In special departments Gossellin, and other foreigners, have also been recently distinguished; nor is it necessary to remind the reader of the great merit of Rennell and Vincent in our own country.

With such examples the author confesses his ambitious desire that the present work may at least be regarded as more free from defects than any preceding system of modern geography. By the liberality of the publishers no expence has been spared in collecting materials from all quarters; and the assemblage of books and maps would amount to an expence hardly credible. If there be any failure, the blame must solely rest with the author; who being however conversant with the subject, from his early youth, when he was accustomed to draw maps, while engaged in the study of history, and never having neglected his devotion to this important science, he hopes that the ample materials will be found not to have been entrusted to inadequate hands. He may affirm that the most sedulous attention has been exerted, in the selection and arrangement of the most interesting topics; and he hopes that the novelty of the plan will not only be recommended by greater ease and expedition, in using this work as a book of reference; but by a more strict and classical connection, so as to afford more clear and satisfactory information on a general perusal. The nature and causes of the plan shall be explained in the preliminary observations, as being intimately connected with other topics there investigated. It may here suffice to observe, that the objects most essentially allied with each other, instead of being dispersed as fragments, are here gatherered into distinct heads or chapters, arranged in uniform progress, except where particular circumstances commanded a deviation: and instead of pretended histories, and prolix commercial documents, the chief attention is devoted to subjects strictly geographical, but which in preceding systems have often appeared in the form of a mere list of names, the evanescent shades of knowledge. Meagre details of history can be of no service even to youth, and are foreign to the name and nature of geography, which like chronology, only aspires to illustrate history; and without encroaching upon other provinces, has more than sufficient difficulties to encounter. The States are arranged according to their comparative importance, as it is proper that the objects which deserve most attention should be treated at the greatest length, and claim the earliest observation of the student.

In the Introduction Professor Vince seems to have omitted nothing in astronomy, or meteorology, that could in the least illustrate geography; and has carefully availed himself of the latest inventions and discoveries. For the botany of the several countries this work is indebted to Mr. Arthur Aikin, a zealous and intelligent cultivator of natural history. It may be necessary to remind the unlearned reader, that the Latin names in this part are unavoidable, because plants not known in England must rarely admit of English appellations.

This work will, it is hoped, shew the progress of geography, in every part of the world, to the beginning of the nineteenth century; and when compared with any system, published at the beginning, or even in the middle, of the eighteenth, the advances will be found to be prodigious. Many of the early systems were not a little injured in truth and perspicuity, by the mixture of ancient and modern names, even in the maps; an absurdity lately attempted to be revived by some French authors: while in this study the modern state ought always to claim the precedence, because the genuine form of the countries, the windings of the shores, the course of the rivers, the direction of the mountains, and all those parts in which natural geography receives assistance from natural history, are only ascertained by recent observations; and upon this immutable basis ancient geography must ultimately rest. The modern delineations of many parts of Greece and Asia Minor have thrown a light upon ancient history, which could never have been derived from theoretic geography, always useless, because it cannot alter the face of nature; and often blameable, as by suppositions of knowledge, it impedes the progress of genuine observation, and patient discovery. In order to delineate the ancient state of a country, it is indispensable that the best modern maps be previously investigated; by which process alone can the sites be accurately determined: and innumerable conjectures of Cluverius, Cellarius, and even D'Anville, have been overturned by the precision of recent knowlege. Yet the first elements of ancient geography are often instilled into the minds of youth from obsolete maps, in which the most important positions of natural geography, and sometimes even the very points of the compass, are perverted; and from authors whose most radical opinions have been overturned half a century ago! The proper progress is therefore to begin with the study of modern geography, which may afterwards be followed, with the greatest advantage, by that of the ancient. The opposite course seems almost as ridiculous as it would be to commence the study of botany by the perusal of Dioscorides, and the Greek and Latin names of plants, without any acquaintance with their genuine characteristics and qualities. In general, genius may be cultivated by the study of ancient authors; but the grounds of any branch of science are to be sought in modern precision.

Amidst other advantages already indicated, the regular references to the authorities, here observed for the first time in any geographical system, will be admitted to be a considerable improvement, not only as imparting authenticity to the text, but as enabling the reader to recur to the best original works, when he is desirous of more minute information *. Yet this improvement is so simple that the omission might seem matter of surprize, were it not that former works of this nature will generally be found to be blindly copied from preceding systems, with the sole claim of superiority in error, as must happen in such cases, where mistakes multiply, and an old hallucination becomes the father of a numerous progeny. The strict quotation of authorities might also be

* It is also to be wished that writers on civil and natural history, &c. would, on the mention of places otherwise minute and obscure, indicate the distance and the quarter of the compass from some well known city, or other object, the bare mention of a name being often insufficient, even for consultation of the largest atlas. This defect often consumes much of the reader's time, which might be saved by the addition of two or three words, with an improvement of the sense, and no injury to the melody of the expression.

rather

rather dangerous in erroneous details; and the omission is as convenient, as it is to pass in silence geographical doubts of great importance, which might prove perilous ordeals of science. Accustomed to the labours and pleasures of learning merely for his own mental improvement, as the delight of his ease, the relief of care, the solace of misfortune, the author never hesitates to avow his doubts, or his ignorance; nor scruples to sacrifice the little vanity of the individual to his grand object, the advancement of science. An emphatic Arabian proverb declares that *the errors of the learned are learned;* and even the mistakes of a patient and unbiassed inquirer may often excite discussion, and a consequent elucidation of the truth. Many blemishes will no doubt, be found in a work of such an extensive and multifarious nature; but those who are chiefly enabled to detect them will be the first to pardon. The author can solemnly declare, that in a few censures which may be here found of some mistakes in other works, he has in no instance been influenced by any motive, except the pure wish of presenting exact information; such a detection of preceding errors being indispensable in a work of instruction. But such passages will be found extremely rare, as he has generally left it to the reader to detect the mistakes of his predecessors, many of which are gross and radical even beyond conception, by a mere collation of their descriptions with those contained in the present work. Should the public favour reward the author's endeavours, he will most sedulously remove any blemishes, and adopt such real improvements as may be suggested. In the style he has chiefly aimed at concise perspicuity; and may have frequently sacrificed elegance of ornament, or magnificence of period, to the severe accuracy of the topic. Even the eloquence of Pliny seems oppressed by the prolix minuteness of geography, and struggles in vain, like a grand cataract, nearly arrested by the frost of an alpine winter. Nay the most decorated and concise of the ancient geographers is constrained to begin with an apology. "I attempt to describe the state of "the world, a work full of impediments and difficulties, and which can scarcely be "enlivened by one ray of elocution; for a great part will consist of the names of "nations and places, with some perplexity even in the order to be followed; and the "materials are rather prolix than alluring. The object is nevertheless grand, and "important; and aspires to the utmost dignity of science; being, even in unskilful "hands, capable of inviting attention, by the contemplation of its magnitude *."

* Pompon. Mela de Situ Orbis, Lib. 1. init. Procœmii.

ADVERTISEMENT

TO THE SECOND EDITION.

AT length the author has been enabled to complete his favourite plan, of presenting to the public a system of modern geography, duly proportioned in all its parts, and such as to offer harmony and uniformity in its various divisions and arrangements. For in the first edition, restricted to two volumes, a great portion of Asia, and the whole of America and Africa, had been necessarily treated with such brevity, that there was no space even for the most important and interesting geographical information. The striking brevity and deficiency of the latter half of the second volume were perceived abroad as well as at home; and the translators laboured by long notes, to supply what the author knew, from experience, repeated reflection, and the most sedulous examinations of the subject, could only be remedied by enlarging the arrangement. In a general system of geography, intended for general information, it is indispensable that there be a harmony of the parts; and the author must be an impartial cosmopolite, without predilection for particular portions. The account of his own country ought, indeed, to be rather diffuse, not from partial views, or national vanity, but to serve as an introduction to the rest; it being necessary, in the first place, that the reader should be intimately acquainted with his native soil. But in the others a strict and impartial distribution ought to be observed, not only in imitation of the classical models of antiquity, whose examples are the safest to follow, as they have stood the test of so many ages; but from the very nature of the subject, which requires that readers of all countries and pursuits, may find themselves gratified by a due extent of information concerning any country which they may wish to examine.

At the same time it needs not be disguised that, when the author composed the first edition of this work, he sometimes laboured under a deficiency of materials, particularly recent Spanish books, of the utmost importance for the exact geography of their extensive colonies, or rather empires, in America; but which, after the most careful researches, could not be found in this country. Zealous to remedy this defect, and at the same time to study with more advantage the present state of geography in France, the only country which can rival England in this department, he went to Paris, where meeting with the most flattering and cordial reception from the most eminent men of science, for which he must be permitted to retain lasting gratitude, he was enabled, not only to procure the Spanish authors wanted, but greatly to increase his fund of material; and though detained by the well known events of the war much longer than he expected, he cannot deeply regret the occasion, as scarcely a day passed without some addition to his information. Hence this edition, which ought to have appeared more

than

than a twelvemonth ago, will be found to have gained in perfection what was lost in delay.

The French translation of this work, which was begun before the author went to Paris, and in which he took no concern whatever, not having seen one sheet till the whole was printed, contributed by its great success to open additional sources. For many diplomatic men, and men of science of all countries, communicated several articles which enrich numerous pages of the present edition. Nor can the French translation be passed without the acknowledgment that, though there be many mistakes for which the author is in no shape answerable, and which arose from the impatience of the publisher, and rapidity of the execution to answer the public demand, yet the translator, M. Walckenaer, is a man of property and information, far superior to the usual pretensions of translators, and has enriched the text with many valuable notes. The work is at the same time honoured by the excellent introduction of Lacroix; the respectable testimony of Fourcroy, the minister of public instruction, recommending it as the most complete and classical work of modern geography; by the reception of the abridgment in the academies of France, and the general success of this system in that enlightened country, rendered more remarkable in the midst of war and national enmity. From such enmities, men of science are always considered as exempted and estranged; and nationalities would be unpardonable in a general geographer, whose first duty it is to view all nations with an equal and impartial eye; and the author must be permitted to express his cordial acknowledgments for the liberal communications he has received from men of eminence in most countries in Europe, so that there now remain very few, of which the description has not been corrected and improved by a skilful and distinguished native.

Among the other striking advantages of this edition, may first be mentioned, the ample account of New Spain, and of the Spanish viceroyalties in South America, drawn from the most recent Spanish materials, and presenting, it is believed, the greatest novelty of important information that ever appeared in any geographical work. The discovery of the precise boundaries of the viceroyalties and governments has also enabled the author to insert maps of various divisions of South America, hitherto unattempted in any collection, though loudly demanded by the wide extent of that portion of the globe. Four other maps have been rejected, and their places supplied by others more correct, and better adapted to the present plan. The brief and defective accounts of the grand territory of the United States, and of the West Indies, have also been enlarged, as their importance demanded; and the view of Africa more duly apportioned with the rest; for, after long reflection and experience, the author has found that an exact system of geography, of whatever size, ought to be divided into three parts; one for Europe; another for Asia, which teems with civilized empires and states, not to mention its vast extent, especially when Australasia and Polynesia are included, so as to amount to one half of the globe. Of the remaining third part, in the harmony of proportions, importance, and materials, at least two-thirds must ever be allotted to America, and the remainder to Africa when fully explored.

The reader may hence perceive that it would be impossible to add another volume to this system of modern geography, without destroying the harmony and regularity of the whole edifice. If the volumes were found too large, they might in a splendid edition, be divided into six volumes in quarto, with an atlas in folio, but any other division

sion would injure the unity of the arrangement. It may also be mentioned that an edition in six octavo volumes should retain all the marginal indications, which form an essential part of the plan, as shewing that the work is not ſplit into fragments, like preceding systems, but forms one uniform narrative. In this respect the American editions are defective, as the plan is deranged, and often obscured, by the introduction of those indications into the text. The author is obliged to Dr. Barton for the honour done by his notes to the Philadelphia edition, but hopes and requests that no future editor will alter his text, on such important topics as the origin of nations, which would be sometimes to make him responsible for ideas long since dismissed by men of ſcience, while a note on the passage would enable the reader to judge for himself, without implicating the judgment and character of the author.

In the large and just portions of this new edition, which are dedicated to the vast Spanish possessions in America, the most rich and surprising colonies known to history, it became necessary to give extensive and independent descriptions, as the original works are not only very voluminous, and extremely difficult to be procured, but are wrapt in a language little studied, so that a reference to them for more ample information, frequently admissible in depicting other countries, would here have been nugatory. But even in these lengthened descriptions, any unnecessary prolixity has been carefully avoided; and it is hoped that no reader will object to the length, which is only caused by the variety and importance of the information, and which, from the confusion of the original materials, it has required the most patient industry to digest and arrange. In some other parts of the work, the descriptions given by voyagers and travellers have been repeated in their own words, not from any momentary relaxation of indolence, for it would have been very easy to have thrown them into the historical form, but because the just impressions made by the objects themselves cannot be better represented than in the precise colours of the original painter; not to mention that the uniformity of the geographical style, lamented by Mela, and necessarily occasioned by the recurrence of the same topics, may be greatly relieved by such variations. Descriptions of manners, in particular, are always conveyed with more truth and nature in the words of the original observer; and as this work was charged with some deficiency in that department, by those who did not enter into the spirit of the geographical disquisitions, though more appropriated to the science. Several of the extracted parts belong to this division. But however curious and interesting the account of the savages of New Holland, and of the people of Otaheite, the last one of the most remarkable tribes on the globe, while the description of their manners here repeated is, after the account of the Araucans by Molina, one of the most minute and singular, which has ever appeared in any language, yet when more ample materials shall arise, from important discoveries in Australasia and Polynesia, a geographer would abbreviate these articles, and introduce other topics more strictly connected with the science. Meanwhile the account of the manners of the Polynesians will not only gratify the most minute inquirer, but will serve to rectify many errors of Montesquieu, and other eminent writers, with regard to a singular stage of society.

To offer an apology for the improvements of this new edition may well appear ridiculous; but in the natural malignity of human nature, and the jealousy of those who wish to make geography a trade, it is not impossible that some may suppose that the author is influenced by the only motives of human action with which they are acquainted.

quainted. Few enemies are so dangerous as those who entertain a complete and deserved contempt for their own characters, but in the wise distribution of nature it generally happens that malignity bears an exact proportion to the weakness of the insect, who is conscious that he would totally escape observation, were it not that he is venomous. Of such detractors the author has heard, and must inform them to their surprise that he is greatly a loser by this new edition, which is published in justice to the public, and to his own reputation. For the expences of his residence in France, the delay of long, sedulous, and painful researches, and the purchase of numerous books and maps, far exceed the reward, however liberal. To readers of a very different description, it may not be necessary to explain that nothing can be more absurd in itself, and more inimical to the progress of all the sciences, than to suppose that the first edition of a work is to be the standard of all the others. Life is short, and the health of a literary man often precarious. He strictly performs his duty to any science, and to the public, when he gives his extent of information at the time; but if his life be prolonged, and fresh materials of great importance should arise, especially at a period when the sciences are making daily progress, he would fail in that duty if he withheld the communication. Among a thousand examples, Mr. Kirwan's Mineralogy was at first restricted to one volume, but so rapid was the progress of the science that he was obliged to extend it to two volumes; and met with deserved applause for this additional attention to science, and the service of the public. It is difficult even to account for the origin of the idea, that the purchaser of a first edition has a right to complain of any additions made in a second. It has been long since observed that nothing is taken from him; and as there can never be a certainty of an author superintending another edition, he can never have any design that his first edition should be imperfect; nor could any such example be produced in the literary history of any age. The natural feelings and innate ambition of an author prompt him, on the contrary, to render his work as perfect as possible, that it may not be supplanted by any other, but may convey his name to posterity. Even in poetry and history the best authors have continued the correction and improvement of their productions to the latest hour of their existence. Pope's Rape of the Lock, justly reputed one of the best of his poems, was tripled or quadrupled, after its first appearance, and the machinery of aerial beings introduced. We should only have smiled at his weakness if he had rejected these noble improvements, that the purchasers of the first edition might not envy those who had procured the others. Many of Voltaire's historical works are in the like predicament. If such have always been the practice in the belles lettres, in works of science it becomes indispensable; and an author who should neglect to avail himself in any new edition of his work, of additional discoveries and materials, would be justly reprobated, and his work soon supplanted by a more complete system. Far from any wish of an unnecessary enlargement, the author has endeavoured, by numerous and often long notes, to reduce his abundant materials within as confined a compass as possible. But to give a complete and satisfactory description of the whole world is no easy attempt; and the length must in some degree correspond with the prodigious extent and infinite variety of the topics. On the other hand, the author cannot, from experience, observe that any benefit would arise from a more detailed description; which, if the harmony of parts were observed, indispensable in solemn and classical compositions, could only be accomplished by doubling the extent

of the present plan; and he doubts even if the pen of Gibbon could have recommended a system of that extent, certainly too wide to excite general interest, and too prolix to be classical.

The novelty of the plan has met with general approbation at home and abroad, as more noble, scientific, and luminous, than any before projected *. Some would have preferred that the natural geography should have stood first, but it is in fact, as is observed in the course of the work, only subservient to the distribution and industry of mankind, forming the most interesting department of the science, which the natural history can never approach in dignity and importance. To the naturalist Kamschatka, a peninsula resembling Italy in form, and size, and volcanic soil, may perhaps appear as interesting as the parent of empire and the arts; but in the eye of an historian or geographer there is no comparison; and the natural history of an uninhabited country would become as it were a void; so that the reader must be allured by topics more generally and intensely interesting to the sympathetic feelings of mankind, before he can peruse the natural history with due attention and satisfaction. Some of the most important features are besides so much changed or influenced by human industry, that to begin with the natural geography would not only occasion many unnecessary circumlocutions and anticipations, but would lead to fallacious views, as implying that such was the state of the country before it was possessed by any nation; while, on the

* The sentiments of an enlightened French critic, and real judge, may not be unnecessary in support of this position.

"We have the pleasure to announce a complete treatise of Geography, arranged in the most clear and methodical order, and presenting all the most important and certain details, contained in the recent discoveries, and the labours and discussions of the most learned geographers of Europe, as far as the science has yet advanced, with regard to the position, dimensions, and configuration of the different parts of the globe. This system contains the essence of the best works, ancient and modern; and the relations, sometimes contradictory, of different travellers are compared, and weighed with judicious criticism; the authorities being at the same time carefully indicated: it presents under the same point of view, and according to their degrees of importance, the political and commercial relations of the various nations of the earth; while the natural productions of all countries are, for the first time, described according to the exact ideas, and the best systems, of naturalists. We thus announce to the geographer, to the politician, to the statesman, to the merchant, to the traveller, to studious youth, in fine, to men of all classes and all professions, one of the most important and desirable literary monuments, which has been published for a long time, and a work ever to be classed among the most useful and indispensable.

"The great success with which it has been received in England, may be regarded as ensuring that of the French translation; but it may not be unuseful to mention, in a few words, some of the numerous advantages, which, independently of the novelty of the plan, and exactness of the execution, distinguish the Geography of Mr. Pinkerton from all the systems which have hitherto been published, or which daily issue from the press. The author being only interested in the diffusion of instruction, and the advancement of the science, has cited his authorities throughout, that the reader may judge of the employment of the materials which he has collected, the result of the studies of twenty years. If he have compared with care the accounts of different travellers, in order to correct the one by the other, he has not shewn less exactness and labour in collecting the best and most recent maps; whence have resulted many learned discussions on the most difficult points of geography, which not only tend to hasten the progress of that pursuit, but may enlighten the professed geographer, and render the man of the world familiar with the most remote and unfrequented paths of that intricate science. In the chapters relative to Historical Geography the author throws a new light on the principal topics of ancient geography, and that of the middle ages: and while he, sometimes, opposes the opinions of the Danvilles, Gossellins, and Rennells, he shews himself their worthy rival in combating them by arguments, which if they do not always dissipate the darkness which envelopes these obscure subjects, disclose a vast erudition, and a profound knowledge of the science, and may lead to new researches and important discoveries in this branch of literature."

contrary, the materials for this department depend on the utmost precision of recent knowledge and discovery, while we know little or nothing concerning the original natural history of any country; and of course to prefix this department to the historical would be somewhat preposterous.

The author has carefully availed himself of any candid critical remarks, which he found in the literary journals, foreign and domestic, and has corrected some mistakes indicated by them. Their eulogy of the style does credit to their own judgment, as in the opinions of foreigners, eminently versed in the English language, such is the purity of the grammar and expression, that they were as seldom obliged to refer to a dictionary, as in any other production whatever of the English language; and the voice of foreigners must in this respect be regarded as an infallible test. Of the works handed down to us by antiquity not above one quarter is written in a laudable style. The others are preserved by the importance or curiosity of the subject. Horace Walpole, Earl of Orford, who addressed to the author, his elegant letter on Graceful Composition, used to observe that when other faults required some skill to discover, it was the easiest of all the offices of minor criticism to rail against the style of an author, but that if the censors do not produce numerous examples of bad style, they are no more to be regarded than village curs, who always bark after a carriage. The requisites of a good style are now so well known and accurately defined, that some hypercritics, who commonly use a most miserable style themselves, remind us of the Scotch Schoolmaster in one of Smollett's novels, who came to London to teach the true pronunciation of the English language. If they live in a provincial town it is scarcely possible that they can be judges of style, of which the standard has always been referred to the capital city; while, like owls in a barn, they can as little judge of the grandeur and dignity which a science, formerly dry and pedantic, may assume by the nobility of a superior style and arrangement. But the first proof of talents is to discern talents: and good judges are, as Pope has long ago observed, as rare as good authors. At present, perhaps that artificial and precise style, which, while it never sinks into defect never rises to beauty, nor ever aspires to "thoughts that breathe and words that burn," is the most prevalent. While there are few painters, there are many eminent cabinet makers. The chief attributes of style are purity of grammar, an infinite fund of language, and nice discrimination of synonymous words, so that the word is precisely made for its place, and could not be changed without injury to the sense, the beauty or the melody; learned allusions, which singularly delight the first and most enlightened class of readers; elegant and appropriated metaphors which surprise at once by their novelty and propriety; sentences variegated with taste and melody: and here and there a single expression, or even word, which, in the hands of a master, will irradiate a whole page. Above all, *keeping* is as necessary in composition as in painting. The dignified expression of the text would become ridiculous in a note; but in the equality of cabinet making, a lobster is described in the same language as a hero. The style ought also to be appropriated to the subject, and even to the length at which it is intended to be considered. Antiquities form a dry subject, of mere instruction, and the chief object is mathematical conciseness; while the style of literary discussions on poetry and the belles lettres can scarcely be too much decorated. Such would be the lessons of our Walpoles, our Wartons, and our Gibbons, to many pupils who would aspire to be masters, who blame without being

being able to shew any cause of blame, and who suppose that a carpenter must be a supreme judge of architecture. Under those great masters, the author may boast of his education — and he also has been at the feet of Gamaliel.

The novelty in the manner of engraving the maps, while it is allowed to confer great clearness and beauty, advantages much to be valued as they expedite any research, has by some eminent judges advanced in years, as Fleurieu and Bougainville at Paris, been regarded as objectionable, because they found it difficult to read the words which are engraved on the sea. This objection appeared to me to arise from misapprehension; for to read, for any space of time, many words engraved in that manner, would indeed fatigue and dazzle the eye; but a map is never read, being only consulted for one or two positions at a time, so that no inconvenience can be experienced. It has also been said that this manner is not new; as if the author, who has seen such an infinite number of ancient maps, did not know that the sea has frequently been marked with black lines drawn across. But as justly might a Saxon coin be compared with a modern medal of Urbain or Hamerani; and the novelty does not consist in drawing coarse black lines, but in producing a grey tint, of a transparent and brilliant appearance, and so completely new that it cannot be executed, except by means of a machine, the invention of an ingenious living artist. There must therefore be a strange confusion of ideas, when the black lines of some old maps are compared with the grey tint here exhibited. Its originality further appears from the difficulty of the imitation, though frequently attempted since the publication of this work; the chief faults being that the lines are too wide, or too black, while it is a delicate grey hue which ought to be expressed.

Conceiving that the zoological part might admit of some improvements, in hands profoundedly versed in that science, the author applied to Dr. Shaw of the British Museum, whose works have acquired a deserved reputation at home and abroad. He has kindly lent his aid, as the reader will perceive from the Zoological Remarks at the end of each volume; those on Australasia being of considerable extent, but authorized by the novelty, variety, and curiosity, of the animals of that region. Mr. Aikin has also reformed the botany, which in some instances was rather prolix and loaded with scientific terms, more fit for a professed treatise on the subject than for a work of this nature *.

It has been usual to make acknowledgements for services received, but as scarcely a country occurs in which the author has not been supplied with original materials by learned natives, or travellers, a recapitulation of the names would be infinite; and he shall content himself with expressing his gratitude in general towards his literary instructors and benefactors, whose names are besides commonly indicated in the descriptions of the different countries. No work probably in the whole circle of literature can boast of such a number of respectable assistants, as the reader will judge on the perusal: and it is dismissed in the consciousness that no labour has been spared to gratify the public expectation.

* The Index, originally compiled by Mr. Ayscough of the British Museum, has also been revised, enlarged, and improved.

MEMOIR

ON THE

RECENT PROGRESS, AND PRESENT STATE, OF GEOGRAPHY.

THE progress of geography has begun to interest all ranks and professions of mankind, and to be apparent even among some nations who have hitherto rather neglected the sciences. Notwithstanding the splendour of Strabo, Pliny, and other great classical writers on this subject, the science had till lately rather assumed the dry mathematical forms of Ptolemy; and writers, without talents or selection, had buried in dull pedantry topics capable of the most seductive amusement and the most profound instruction. Justly become an indispensable branch of education, it now attracts the attention of the fair pupil, as well as of the future statesman, warrior, or philosopher; and its progress, by opening new intercourses, and abating national prejudices and animosities, may be said to contribute in no small degree to the improvement and happiness of the human race.

But as this important science had been generally treated in modern times, as a mere auxiliary of history, in a pedantic and repulsive manner, without the dignity and infinite variety which so grand a theme deserved, and ought to have invited, there is the less wonder that it has rather been neglected among those very classes, where it might have been expected to have been the most diffused. It could hardly have been supposed that a learned geologist should imagine that New Holland is near the northern pole; yet this is no solitary instance, for even recent writers on astronomy, natural philosophy, and natural history, often betray an unexpected uancquaintance with this science, which ought in a great measure to guide their researches *. To instance another class, it is scarcely possible to conceive that a minister or statesman should be ignorant of geography, a science, without which, neither military operations can be directed or arranged, distant possessions worth acquisition indicated, nor even pacific negotiations conducted with such accuracy as to preclude future disputes. The treaty of Utrecht was the work of very able negotiators; yet the seeds of war were laid from mere ignorance of geography, for, in defining the French and Portuguese possessions in South America, the river Oyapok was confounded with that of Vincent Pinzon, though at the distance of thirty leagues. The Duke of Newcastle is said to have eagerly inquired, "in what part of Germany is the Ohio;" and in the dispute concerning the navigation of the Scheldt, a later minister could not discover that river in the map, becauſe it was written L'Escaut.

To render geography worthy of being perused by statesmen and men of science, which could only be done by treating it in the views of a statesman and a man of science, was no small object of the present design; and if the author may trust

* It is said that in successive editions of the *Requisite Tables*, Anvers was put under one latitude and longitude, and Antwerp under another.

many literary journals, and letters from distinguished persons of various countries, he has succeeded. Eminent diplomatic characters have contributed with zeal to the advantages of this new edition; and it is hoped that the statistic part will be found, like the others, to have received great improvement. But it would be laudable to attach archives or offices of geography, conducted by able proficients, to the charges and residencies of ministers of state, to supply the most recent and authentic intelligence, and prevent the possibility of mistakes, which may prove of great and lasting detriment.

After these brief considerations on the utility and importance of the science, regarded in rather a new point of view, it will be proper to chuse the epoch at which the present memoir shall commence; and a more proper cannot be selected than that of the death of D'Anville, 1782. Only twenty-four years have elapsed since the death of that great geographer, but how pregnant with important voyages and discoveries, and geographical improvements of every kind!

An able work on geography may be safely pronounced to require greater labour, and more various knowledge than any other human production, as it is the only science which unites the mathematical department with the political, ethical, historical, physical, and descriptive. No wonder then that it should be rare to find mathematical knowledge, and the capacity of drawing faithful and elegant maps, united with skill in the learned and living languages, and the talent of writing a clear and precise disquisition. Hence the superlative and just reputation of D'Anville, whom to have learned to venerate is already to have made some progress in the study. Assisted by the munificence and communications of the great, and the correspondence of the learned, he became master of all the materials to be found in his time; and used them with such sedulous labour, and minute accuracy, that his works will ever form a memorable epoch in the history of Geography. Even of the countries, where the greatest improvements have since been made, his maps may always be compared with pleasure and advantage, as they serve to shew the limits of knowledge at the time when they were composed *.

But it were absurd to unite the epithet of perfect with any production of man. In ancient geography, D'Anville was often misled by vague similarities between ancient and modern names, not being sufficiently conversant with the history and literature of the middle ages, which often overturn such idle speculations, by marking the erection of the modern city, or commencement of the modern appellation. A striking instance may be found in his confounding the Bergos of Pliny with Bergen in Norway, which was founded in 1069; and by some unaccountable fatality, he has implicitly adopted the crude ideas of Cluverius and Cellarius, concerning the knowledge of the ancients in the north of Europe, not to mention his assigning too great an extent to their discoveries in Asia and Africa. In modern geography D'Anville has often neglected the mountains, though a more prominent and greater feature of nature than the rivers, and more distinctive of the history and progress of nations. A stranger at the same time to a new science which began to dawn, that of orology or scientific descriptions of great chains of mountains, D'Anville has often placed at random little detached mole-hills, which can never delineate the nature or breadth of chains of mountains; sometimes, like the Andes, presenting a vast belt or table-land of four thousand miles in length, and from one hundred to two hundred in breadth. It is surprising that, as all accurate maps in general geography are reduced from larger surveys, the far superior advantages of the recent plan, accuracy, perspicuity, and beauty, above all a true and just representation of nature, did not impress

* D'Anville drew all his own maps with singular neatness. His executors presented to me a specimen, which I keep as a precious relic. He never had an eleve, and of course could leave none.

this great geographer. Of late, however, his countrymen have made great progress in this new improvement, for in the map of the French empire, published in 1804, at the *Depot de la Guerre*, the projection of the mountains is carried to the utmost perfection, attainable on a small scale, being a complete miniature of a large topographical survey *.

A valuable catalogue of all the works of D'Anville was published at Paris in 1802, with an eulogy by M. Dacier, to which the reader may be referred. Suffice it here to observe, that to his other talents was joined a singular sagacity in fixing doubtful positions, so that by the voyagers in the Moluccas and in Egypt, his skill was equally admired. He was born at Paris in 1697, and died there on the 28th of January 1782, at the advanced age of eighty-four years. It is said that this able geographer, whose exact eye pervaded the globe, had scarcely or never passed the barriers of his native city. The pursuits of a geographer, though intimately connected with those of the traveller, can be little forwarded by personal journies or voyages; and the brevity of human life will not permit geography to derive great advantage from such exertions; for as a geographer cannot employ, with Saussure, forty years in the examination of the Alps, nor ten years in every country of the globe, he must, with the bee, suck honey from every flower, instead of spinning his own web like the spider. His prerogative, like that of the architect, is to erect a solid and elegant edifice from materials already prepared.

On the continent, where venders of maps are not styled geographers, D'Anville had the title and pension of Geographer to the King, and enjoyed the advantages as well as the glory attached to his talents. His most important maps and memoirs appeared between 1740 and 1770. One of his chief works, his Ancient Geography, was published in 1768; but as he has styled it an abridgment, he has treated the subject in a manner too dry and concise, and it might not be difficult at the present period to produce a superior treatise. Some of his first maps were constructed for Rollin's Ancient History; and he seems to have retained a predilection for the erudition of ancient geography. It must be understood, that the dates in D'Anville's maps do not imply that he made no later improvements, for some were retouched long after. Thus the coast of Greece, published in 1756, was retouched in 1779. In that of Asia 1751, there are improvements 1763, and even 1780. Africa 1749 was retouched 1770, and 1777. North America 1746 has various improvements, the latest 1761. South America 1748 has corrections as late as 1779. All these improvements are indicated in the catalogue of his works; where it is also observed that his map of Quito 1750, four sheets, is the rarest and most curious of all his productions, the copper and impressions having been purchased by the King of Spain, so that it was believed that only one copy existed in France, that in D'Anville's own collection of maps, now in the archives of the minister of foreign affairs. But I was so fortunate as to procure a copy or two at Paris, with its original accompaniment, unknown to the author of the catalogue, namely a memoir of Condamine on the pyramids erected by the mathematicians in Quito, to commemorate the admeasurement of a degree of latitude, but which, being offensive to the King of Spain, were soon destroyed; and as the memoir of Condamine is written with some asperity, this was probably the real cause, that all the impression was bought and suppressed by orders of His Catholic Majesty †.

It is not unworthy of observation that, about the precise period of the death of D'Anville, Rennell first began his celebrated career, and introduced the science of

* Among the first small maps of the orologic kind, were those which I directed for my Enquiry into the History of Scotland 1788.

† The works of D'Anville are now sold by M. Demanne at the Imperial Library at Paris, and the collection costs about seven or eight guineas. If purchased elsewhere, it should be observed if the maps have the latest improvements.

geography into England, in a form at once inviting, exact, and scientific, by his memoir and map of Hindostan. But as the works of D'Anville have been assumed as forming the first epoch in this little memoir, it will be more proper and connected to pursue the progress of geography in France, before tracing its steps in England and other countries.

In ancient geography D'Anville was ably succeeded by Gossellin, whose Analysis of the Greek Geography appeared in 1790. No preceding writer had ever entered with such skill and patience, into the laborious and intricate paths of ancient mathematics and astronomy, which are strictly connected with ancient geography. The itinerary measures, the mensuration of the earth, the ancient astronomical observations, the ideal zones, the climates as denoted by the length of the day, all presented topics of sedulous inquiry, and anxious research. At the same time drawing maps with a neatness equal to that of D'Anville, and constructing long numerical tables with vast labour; his indefatigable love of science would appear incredible to those who do not feel the same passion. His study of the ancient theory of climates and zones has enabled him to explain why Ptolemy has contracted the extent of Hindostan towards the south, as, if Ceylon had been placed in the torrid zone, it would have overturned the ancient theory, that the torrid zone was totally uninhabitable; and why the same geographer has bent Scotland towards the east, as otherwise the most northern cape would have passed the climate of Thule, where, the longest day, being twenty hours, indicates a latitude of nearly 63°; the radical error arising from his having raised the latitudes of England three degrees and a half too far to the north; and as Ptolemy knew that Thule was to the north of Britain, he was obliged, in order to preserve his theory, to suppose that Scotland bent towards the east *. It is needless to remind the learned reader, that this circumstance had embarrassed geographers and antiquaries for two centuries and a half; whence the utility of M. Gossellin's new views of ancient geography may be conceived. In his grand work the Analysis of Greek Geography, M. Gossellin has, with great ability, demonstrated the fallacy of various opinions concerning the extent of ancient knowledge in the east; and has ascertained, that the extent of that knowlege did not pass the western parts of the kingdom of Siam, the Golden Chersonese being Pegu, and not Malacca as D'Anville had supposed. With such merits the name of Gossellin will pass to the latest posterity, as a great and solid improver of ancient geography; and his illustrations of the recent translation of Strabo will add to that reputation: and though in treating the geography of Western Africa, and on some other occasions, he have too much restricted the knowledge of the ancients, yet his manner is so profound and precise, and his arrangement so luminous and elaborate, that those who are able to controvert his opinions will be the first to admit his superior merits; and if he err, it is on the opposite side to erroneous doctrines, so as to leave the truth in the middle, and to supply many weapons for its establishment.

After this just distinction due to the first living geographer in France, it will not be necessary to enlarge concerning the others. Buache, geographer of the marine, possesses eminent skill in modern geography, so far as it extends to a wide acquaintance with maps and charts of all countries and seas, and communicates his knowledge with great liberality. But a love of theory, which seems inherent in his name and family, leads him to speculations in ancient and modern geography, which rather imply a love of paradox than of truth; and if one of his paper kites fall, he will soon let fly another, which, far from being armed with the electricity of science, or of bringing the lightning of truth from heaven, is rent by the first breeze of opposition. M. Barbié

* *Lettre de M. Gossellin à M. Pinkerton*, in the Appendix to the *Recherches sur les Scythes*, Paris 1804, 8vo.

du Bocage drew the beautiful maps for the *Voyage d'Anacharsis* under the eyes of Barthelemy, chiefly from drawings taken on the spot by orders of the Count de Choiseul; but several parts and plans have been supplied from imagination, and even that of Athens has been found to differ considerably from the truth. M. Barbié has however a learned library, and is not a little industrious, so that his researches are often useful and ingenious; and possessing the modesty of real science, he is little obtrusive of his opinions. When I left Paris he was usefully occupied in preparing the maps for the second volume of the Count de Choiseul's Picturesque Journey through Greece; and had executed for the government a large and curious map of the Peloponnesus, in which, however, some of the topography, though laid down with the apparent minuteness of truth, was only imaginary, a practice which must be blamed, as it would be better to leave a blank *.

When to these names is added that of Coquebert, who has hitherto been more distinguished for his geographical knowledge than for his publications, it would be difficult to add any rivals. Quacks abound, as usual in all countries, but their natural reward is oblivion †.

But many of the most beautiful and solid productions of the French geographers have, during the last and present century, been executed by orders of the government.

* In his map of the plain of Troy, published in the edition of the Voyage d'Anacharsis 1799, he confessed to me that he had, by mere mistake, placed the river Thymbrius on the wrong side of the Simois.

† As Lagrange and Mechain, (the latter since dead of the yellow fever in Spain,) are astronomers of the first merit, so La Lande was rather considered as an useful compiler; but his repeated trifling letters to the journals, and his lectures on the Pont Neuf, contributed, with other circumstances, to subject him to a charge of *charlatanerie*. Yet more subject to the same charge is Mentelle, formerly, by intrigue, geographer to the Count d'Artois, and now, by intrigue, member of the Institute, and teacher of the new princes. Destitute alike of talents and science, the art of Mentelle is to copy and disguise the labours of D'Anville, Gossellin, and other able inquirers; often with such a multitude of mistakes, and confusion of ideas, that the very perversion gives them, to the unskilful eye, an air of novelty. Sometimes after copying a whole system of Gossellin, as being strictly his own, he will slightly mention the real author at the end, and request indulgence for having combated his ideas! After D'Anville had, with the usual precision of real skill, separated ancient and modern geography, which again to blend together, would be to forget the history of the middle ages, and to confound the whole science, no writer but Mentelle would have sought to have distinguished himself by reviving the ancient pedantry, as he has endeavoured to do in his *Geographie Comparèe*. His *Cosmographie*, a word which he alone would chuse to apply to geography, and his edition of Vosgien's Dictionary, swarm with such errors as would disgrace a school boy. In the MS. of the latter I counted four gross errors in three lines. In conjunction with Chanlaire, a lawyer who had amassed some money and only furnishes the funds, Mentelle has published what he calls an Atlas, of which a judgment may be formed from the physical map of Germany, in which the sandy plains on the Baltic, where there is not even a hill, are thickly set with chains of mountains, higher than the Alps! When I asked him the reason of this phenomenon, he answered with the profound gravity of a professor, that in geography no axiom could be more certain, than that high mountains always accompany great rivers. Piqued at his being unmentioned in the first edition of this work, upon the appearance of the French translation, he had the effrontery to set his name to a miserable compilation of modern geography in fourteen vols. 8vo. which one Brun, a young Dane, who had left his country, and been glad to live as an amanuensis at Paris, had compiled and translated from various German authors, in so chaotic a manner, that it was justly styled, a good description of the world before it was made. This compilation of a Danish youth, baptized with the name of Mentelle, was oddly enough styled the *French Geography*, and loudly trumpeted in opposition to this work, which was, as they thought invidiously, but really honourably, denominated the *English Geography*. All the dependents and flatterers of the new government applauded this French geography, and condemned the purchasers of the English Strabo, as the friends of this work chose to call it, as incurable *Anglomanes* and enemies of France. This railing still continues in the French journals, and M. Brun is so kind as to help himself upon the occasion, loudly declaring (*Journal de l'Empire* 10 June 1806,) "qu'un Anglomane est encore pire qu'un Anglois!" In like manner a far more respectable author, Cambry, chusing, to revive in favour of France, the exploded dreams of the Celtic power and empire, has repeatedly insinuated that I was hired by the English Government to write my Dissertation on the Goths; in which the ancient power of the Celts, that is, as he erroneously supposes, of France, has been restricted to its proper narrow bounds.

Not

Not to mention the grand map of Cassini, which was only completed in 1794, what are called the *Cartes des Chasses*, the maps of the royal hunts, or forests, form the most beautiful and singular monument of the kind which has ever appeared in any country. It is said that the engraving of each map cost four hundred louis d'or; and they certainly deserve it, for the beauty, harmony, exact and minute delineation, and elaborate accuracy, far surpass all description. For each department, wood, water, hills, fields, &c. &c. a separate engraver, eminent in his particular line, was employed. Of the twelve designed, only eight were finished before the subversion of the monarchy; but the remaining four now proceed with all possible expedition *. Speaking of these models of beautiful engraving, it is to be regretted that the prices of maps do not approach nearer to those of other engravings, as the publisher would then be enabled, by higher rewards to the artists, to obtain more neatness and elegance.

From the *Cartes des Chasses* the transition must be violent to any other geographical engravings, but the laudable attention of the ancient government to this interesting branch of science, retains its beneficial effects, and important maps are frequently published at the *Depot de la Guerre*, and the *Depot de la Marine*. Many of them are exclusively reserved for the use of the French generals and admirals; the former in particular, by the exactness of the topography, affording great advantages to military operations. The map of Suabia, the proposed map of Holland on the scale of Cassini, and of Egypt in fifty sheets, are monuments which do honour to the science †. At the *Depot de la Marine*, are the engravings for the remaining part of the Voyage of Entrecasteaux, ready for publication. He has accurately surveyed the S. W. coast of New Caledonia, which is wanting in our maps, and seems to consist of a range of mountains. Half the southern coast of New Holland also appears, but the eastern half remains hidden with the labours of Flinders and Baudin, the latter of whom was little adapted to such an expedition, his sole recommendation having been his interest with one of the directors of the then government. The ingenious mineralogist who accompanied Baudin informed me, that that part of the southern coast of New Holland, which was unvisited by Entrecasteaux, and which approaches nearest to Diemen's Land, presents two considerable bays, that towards the east, if I remember right, having a considerable island at its entrance, called the island of Kanguroos, while towards the west there is another bay with an isle so near the bottom, that though it may be circumnavigated, it appears united with the land. New Holland, or Notasia, for men of science have begun to adopt the latter term, does not appear to be intersected by any strait or straits, as was supposed; but to form one continent, or vast extent of land, insulated like the other continents; for Asia, Europe, and Africa, form in fact an insulated continent, like North and South America.

One of the latest improvements, which begins to pass gradually into geography in France, is not only to ascertain the height of mountains, but that of the vast plains or expanses of country which slope in various directions, chiefly towards the great rivers, and present various aspects and altitudes. That excellent mineralogist Daubuisson, lent me in MS. his curious observations on those of France, but as he will probably publish them, I do not wish to anticipate his labours.

* They were never sold, being only designed for presents; and are very rarely to be met with, as if the King hunted during snow or rain, two or three copies might be destroyed.

† The *Memorial Topographique et Militaire*, published by the *Depot de la Guerre*, must not be forgotten. The first three or four numbers 8vo. contain several excellent papers on the projection of maps, and the progress of geography. The grand map of the campaigns of Bonaparte, by Bacler d'Albe, is now finished, and includes Italy and Sicily. The author saw many of the materials, and can add his testimony to the general opinion of its accuracy.

This

This brief view of the present state of geography in France, cannot be closed without honourable mention of the able treatise on the sphere by La Croix, composed as an introduction to the French translation of this geography. From the judicious manner in which the author has treated the subject, considering astronomy merely so far as connected with geography, laying down clear rules for the projection of maps, and treating the other topics in the most luminous and popular manner, it may safely be pronounced the best of the kind which has ever appeared, and a master-piece in that department of science.

The progress and present state of geography in England next claim consideration. It has already been observed that, about the time of the death of D'Anville, 1782, Rennell was the first who opened the sources of genuine and scientific geography in England. Before his time this great commercial country, to which the study was more essential than to any other in Europe, had oddly applied the names of geographers and hydrographers to compilers and venders of maps, mostly mere copies of the French or common surveys of English counties; while in France, from the middle of the seventeenth century, the Sansons, the Delisles, D'Anville, men capable of writing with great learning in the Memoirs of the Academies of Sciences and Belles Lettres, or of publishing elaborate memoirs, had alone been dignified with the titles of geographers and hydrographers to the King. This confusion of ideas is wholly unaccountable, for as well might the printer of a poem be created poet laureat*. If just and precise ideas of the dignity and importance of the science were at length to dawn, we should have seen Rennell appointed geographer to the King of Great Britain, and Dalrymple hydrographer, with yearly salaries of at least five hundred pounds, far better bestowed than on worthless sycophants; for the places would be so far from being sinecures, that from the labours of the possessors, no small glory and advantage would arise to the nation. The very names of our royal geographers and hydrographers are totally unknown in the history of the science; and it would be idle to evocate their shades, or rather shadows of a dream, in order to demand their pretensions. Servile copiers of French maps, and even those often antiquated, they only served to degrade the science and the national reputation. So conscious of this was Gibbon, a man deeply embued with many sciences, that he employed D'Anville to draw a map worthy of his history; but which, owing to the commencement of the war 1778, was never completed. Before Rennell opened the gate of the temple, the porch had been filled with mere venders, who, with the usual mercantile spirit, shewed great jealousy of their little trade: and conscious that it required neither talents nor industry, wished to conceal the extreme ease of the process, and thus threw mystery and obscurity around a plain and perspicuous science. Each was jealous of his little monopoly, and anxious to hide the sources of his information, nay, would affect to rail against the labours of the very authors of it; as we have sometimes seen our men of letters impeach Voltaire, though he was the first and only cause of diffusing the knowledge and glory of English literature through France, and the continent of Europe. But when shopkeepers had become geographers, how was it possible to avoid these infallible consequences, and procedures merely mercantile, instead of the noble and liberal views of men of science, only anxious for their own reputation and that of their country?

To quit this disagreeable theme, and return to the real progress of geography in England, it must not be forgotten that when, though rarely, the French maps of Delisle and D'Anville were not copied, yet to the disgrace of the country, Frenchmen were employed; and our royal geographers never thought of exciting native talents,

* Or Messieurs Cadell and Davies, who published the works of Hume, Robertson, Gibbon, inscribe on their door, *Historians to His Majesty.*

though it would be very difficult, at any epoch, to trace the employment of a single Englishman in any department whatever at Paris. Among the French employed in London some distinction is due to La Rochette. Acquainted with him for many years, I must say that he had a real tincture of the science. To a select library of books of geography, voyages, and travels, he united a considerable spirit of research; and spared no time nor labour in order to obtain the praise of correctness. It was idly reported, that he had been an eleve of D'Anville, while that great geographer never had an eleve, and La Rochette candidly informed me, that he could only say that he had seen D'Anville. His life may be said to have passed in labour, poverty, and domestic calamity. His drawings were in general neat, elaborate, and correct, so far as his judgment and materials extended; yet he was refused one hundred guineas, which he demanded, for a drawing of the world for a projected globe, and the sum was reprobated as exorbitant! He told me that all his demands were regulated, as, contented with a mere existence, a certain daily pittance, he compared this with the time to be employed, so that his payments were upon an uniform standard. Among his chief productions are his map of Hindostan, and that of the marches of Alexander the Great. But as his reading was far from being universal, or even extensive, he would sometimes supply the want of materials or information, by a pretty and picturesque neatness, which at the first glance strikes as imaginary, and unlike the face of nature. Nor could I persuade him to adopt the genuine geographic plan of delineating the chains of mountains; but he continued the antiquated manner of detached molehills, while he might as well have represented rivers by dotted lines *. He pleaded, as an apology, that his maps were crowded with names, and that he could not find room; but did not reflect that he was sacrificing the grandest features of nature to the names of miserable villages, unknown in history, civil or natural, and which, if unexpectedly called into notice, might be easily found in larger surveys. La Rochette however can never be classed among the learned geographers, as I recollect no memoir which he has published; his learning was limited, and his judgment and sagacity far from laudable, nor was he free from that jealousy which accompanies trade, not science: for as his materials constituted his sole merit, he was shy of communication, while a man of science is commonly frank and open; for he knows that he can lend his materials, but cannot lend his talents.

It would be useless to retail the various truly scientific productions of Rennell, for his name alone will recal them to the memory of every reader. To indicate small faults, where there is so much merit, would be invidious; and it is better to say as Bolingbroke did of Marlborough, "he is so great a man that I have forgotten his faults." But the public voice has gently whispered that the treatise on the geography of Herodotus is too prolix by one half. Books should be appropriated, by a scale of taste and judgment, to the natural extent and importance of the subject; otherwise, in the language of scripture, 'the world would not contain the books that might be written.' As it is not too late to amend this defect, (in fact the only reason why it is here mentioned,) it is to be hoped that the excellent author will not thus evaporate his future labours, which are anxiously expected, but will submit them to the numerous erasures of some learned friend. Nor in candid criticism can Dr. Vincent's work on the voyage of Nearchus, and the Periplûs of the Erythrean Sea, be exempted from a similar charge: and the work is besides more laudable in the attempt than in the

* Lacroix, Introd. to this Geography, p. clxvi., has justly observed, that this way of indicating mountains is wholly vague and insignificant, as instead of shewing the direction and branches of the chains it only says 'here are mountains'. La Rochette even confessed to me that he sometimes put in mountains when he had nothing else to fill the map. I begged that he would in future prefer another old plan, that of inserting elephants and ostriches.

 execution,

execution, the author being more conversant in the classics, and their commentators, than in the progress and recent improvements of the various sciences.

The various treatises on the plain of Troy, lately published in England, deserve mention, as contributing many new improvements of ancient geography. This interesting topic will speedily be further illustrated by the appearance of the second volume of the Count de Choiseul's Picturesque Journey through Greece, Chevalier, who led the way to this inquiry, having only been employed by that nobleman.

Of the new grand Survey of England and Wales, the part beginning with Essex has appeared, and has fully answered the public expectation. It is executed at the Tower by select draftsmen and engravers. It is to be regretted, that the county of Kent was permitted to be taken off the plates, as it served to distract and forestal the public opinion, and produce misapprehensions concerning the nature of this grand design, which is not a series of counties, but a general trigonometrical survey of England. Cassini would never have permitted such an injudicious disturbance of the original arrangement.

In some small maps of the English counties, some large maps of England, and in some of those destined for one of the Encyclopedias, a singular novelty has been introduced, which, if continued, threatens to overwhelm the art with barbarism, and cannot be too severely reprobated. This wonderful improvement consists in engraving almost all the names of places in Roman characters, so that the eye, instead of the harmony and repose always esteemed indispensable in beautiful engravings, is dazzled and repelled with disgust, from the sharpness of these characters; while, in the confused uniformity, scarcely can a name be found or distinguished from another. The next step, perhaps, may be to print maps with moveable types, which would be more soft and agreeable to the eye than the sharpness of the Roman letter when engraved. That form of character has, on the contrary, been rarely admitted by masters who often prefer a line drawn under a remarkable name: for they knew well that in an engraving, the eye is pleased with softness and repose, and hardness is regarded as the worst of all defects. Besides the confusion, which is such that four minutes are required to find what in another map would be caught in an instant, there is also an air of meanness and negligence; for the beauty of a printed page consists in the regularity of the lines, but to take detached words and scatter them over a page, though presenting an accurate resemblance of these maps, except its superior softness to the eye, would have an effect which may be easily guessed by the reader. It is hoped therefore that the softness of the Italic character, which has been used by all the great masters of the art, will continue to be preferred, only interspersed with a few Roman names for the sake of variety, and that this new improvement, alike disclaimed by taste and knowledge, will be totally dismissed.

It was also about the period of the death of D'Anville, that Mr. Arrowsmith began to assert the prerogative of an English artist, and, instead of copying French maps or employing French designers, to make his own drawings from original materials. The success he has met with has corresponded with the merit of the attempt, and it would be difficult to name any of his maps which has not the praise of some originality; and he has great merit in being the first who attempted to lay down the chains of mountains in large maps, on the real geographic plan, as describing the nature and appearance of the earth.

It is hoped that even in this rapid sketch, few objects of consequence have been omitted, and any such omission will be wholly foreign to its intention. It is not a little remarkable that while our maps were copied from those of the great French geographers, we, in return, furnished books of general geography, which were translated into

French. Salmon's State of all Nations was translated into French and Italian; and in the slow advancement of their literary knowledge, it is to this day quoted by Spanish authors. Gordon, a teacher of mathematics, had applied the strange name of grammar to a small and dry treatise of geography, for the use of youth, not knowing that *grammar* in no language extends beyond the use of letters and words; and is of all sciences, perhaps, the most remote from geography, which is built on drawings, maps, plans, and descriptions. Yet this striking absurdity was retained by Salmon and Guthrie; and the translation of the work ascribed to the latter, is a further proof, that, while the French excelled in maps, they were deficient in elementary works, though their language abounds with excellent geographical dissertations. The diffuseness and pedantry of Du Fresnoy, and the dry, though commonly accurate conciseness of Nicolle Lacroix*, conspired to avert men versed in the other sciences from this pleasing and important study, which they seemed to regard as only adapted to education; and when a question arose were contented to consult some erroneous dictionary. Nor did the translation of Guthrie, extended to nine volumes, and accompanied with a load of matter alike dry and extraneous, contribute much to remove their aversion. The object wanted was to treat geography in a more noble and elevated manner, and with an arrangement truly scientific; and by thus raising it to the dignity of the other sciences, to present it in a form worthy of the classical models of antiquity, capable of delighting and instructing the reader, of informing alike the statesman and the man of science, and of diffusing solid knowledge among all ages, ranks, and conditions.

The gratitude of the Author for the favourable reception of the present work will, it is hoped, be best evidenced in the sedulous labour which he has bestowed upon this new edition; in which the extent, plan, and arrangement of a complete system of modern geography, such as they appeared after long and mature consideration, have at length been effected. He may venture to foresee that, by abridging or withdrawing some particular parts, for example, in the accounts of Polynesia and the West Indies, and sometimes by additional annotations, it may not be necessary, even for a century, to add more than one hundred pages. The dreams concerning the importance of discoveries to be made in the centre of Africa will fade before the light of authentic knowlege; a few savage tribes, a few towns built of mud, sandy desarts, and thorny forests, will not authorise long descriptions. The course and termination of the Niger, when known, cannot warrant in a general system, a detail approaching to the infinitely superior grandeur of the Maranon. When European nations shall abandon their wars, which may be called civil and intestine, and shall, by the subjugation of Africa, establish industry and civilization in that unhappy continent, some centuries must elapse before the description, interrupted by vast desarts, can correspond to an equal extent of cultivable soil in South America.

Chiefly by recent English enterprise the globe has been at length completely explored; and there can remain no new discoveries of sufficient importance, to embarrass geographical arrangement. The Magellanic Lands have been finally dismissed from geography; and of the Terra Australis only a scientific reminiscence remains in the appellation of Australasia. To avoid an ambiguous and long circumlocution, the name Polynesia has been adopted for the numerous scattered islands in the Great or Pacific Ocean, which being the widest expanse, is sufficiently indicated by the former epithet. Far

* The best French abstract of geography for the use of youth is that of M. Nicholle de la Croix, in two thick volumes duodecimo. It was first publiſhed in 1752; and must not be confounded with the geography of M. de la Croix, published about 1690.

For many other authors the reader may consult the catalogue of Dufresnoy, which will shew how difficult it is to write well on a science where, for one author who survives, a thousand perish.

from making any apology for adopting these new divisions, the author wishes that men of science would at length exert their authority, (and their's is the only competent court,) to prevent the diffusion of barbarous and absurd appellations, which can scarcely even be used with gravity in solemn composition. Nor may it be unnecessary to remind the unlearned reader, that these appellations are only new to him, having been used by the German writers on natural history and geography, for more than twenty years; so that without a knowledge of them it would have been impossible to have understood many valuable authors. The routine and infallible obstinacy of ignorance have always been found long to resist any improvements in the sciences; and in this the difficulty is increased, because illiterate compilers and venders of maps, often anxious to sell antiquated productions, naturally withstand any improvements that might injure their traffic. Some have even been found so totally unacquainted with the subject, as to ridicule the idea of six quarters of the globe, not knowing that there are eight great quarters of the compass! Quarters of the globe formed a familiar and vulgar expression long before America was discovered; and every school-boy knows where he is in his quarters, and consults Ainsworth's dictionary, that quarter is *regio*, a region *.

But in fact the term *quarter of the globe* begins like that of *zone*, to be antiquated; the proper term is *region* or *division*; and in a complete survey of the globe, as now discovered, there are two grand continents insulated by the ocean, one of them being called America, while the other is arbitrarily divided into Asia, Europe, and Africa. A third continent, for a continent, like a planet, may be large or small, is Notasia, absurdly called New Holland, but as it approaches more to the received ideas of a large island, and has many great islands adjacent, the novelty of the appearance excites new ideas, and demands a new appellation. Notasia therefore, with the adjacent large islands, may, in exact and scientific description, be regarded, not only as a new quarter, region, or division of the globe; but, with the adjacent large fragments of land, as forming in precise language a grand MARITIME division, under the name of Australasia, being to the south of that grand continent, and the only part which really exists of the supposed Terra Australis. In like manner, as it would be a needless circumlocution to say 'the numerous groups of islands lately discovered in the Pacific Ocean;' not to mention that even the circumlocution would be ambiguous, as it might be understood to include Australasia, and all the islands along the western coast of America, the name of Polynesia becomes indispensable for another grand MARITIME division. In this view, even the vulgar expression and acceptation of four quarters might be retained for the grand TERRENE, or continental regions, to which the two MARITIME divisions are supplemental.

In a general view of the globe, it must not be forgotten that Delambre and Mechain, charged to measure the arc of the meridian between Dunkirk and Barcelona, have discovered irregularities in the degrees, but not sufficient to interest geography. The degree measured by Maupertuis, in Bothnia, not in Lapland, as he imagined, being rather suspected; upon a fresh mensuration, by Hielm, there was found an

* Among the significations of quarter, indicated by Johnson, are 'a region of the skies, as referred to the seaman's card, in which sense it is used by the classical Addison: and even a particular region of a town or a country. Among other senses, perhaps these critics will be glad to demand quarter. Even in French, though the French have no right to legislate in maritime discoveries, *quartier* means any part; *la ville de Londre est divisée en vingt-six quartiers;* 'the city of London is divided into twenty-six quarters or wards.' Yet a very ignorant noble emigrant has formally proposed to the public to divide the globe into four regular quarters, like an orange; and the first, comprising Europe and Africa, is forsooth to be called *Celtica*, in honour of the ideal Celts of France, a great people unknown to history, or by any monument whatever of civilization; an idea as wise as that of M. Cambry, above mentioned, that I was hired to degrade the honour of France by writing against the Celts!

error

error of one hundred and ninety-six toises, so that the oblateness of the earth towards the poles is now computed at $\frac{1}{333}$*.

Having thus discussed the progress of geography in the two most enlightened countries of the world, and those which have the most contributed to its advancement, little remains to be added; and as the topics are brief, the arrangement becomes of little moment. As mere curiosities may be mentioned, the large Greek maps published at Vienna, of which M. Barbié du Bocage was so kind as to favour me with a copy. There are a planisphere, and separate maps each in four or more sheets of the four received divisions of the globe, and the singular appearance of the modern names in Greek letters is not a little amusing. But the map of Greece, in nine small sheets, though of little importance in exact geography, is more interesting; and may serve to indicate and rectify some positions. Nor are the Greeks, who deserve a better fate, without recent elementary works on geography. Having thus hailed the parent of European science, let us pass to Italy, where Zannoni has published at Naples, in 1803, a prospectus of a new map of Italy, in fifteen sheets, a labour for which he is highly qualified. This geographer praises the map of Bacler d'Albe, which includes Italy and the southern part of Germany, particularly the delineation of Corsica, the duchy of Mantua, and some other parts, as quite new, and superior to all other maps; but blames the Tuscany of D'Albe, the Venetian States, and kingdom of Naples. Piedmont, and the coast of Genoa also present many mistakes; and the city of Genoa is moved ten minutes too much to the east.

From Italy the passage is not difficult to Spain, where unexpectedly we find a considerable progress in geography. The astronomical labours of Tofino and Malespina, upon the coasts of Spain and her colonies, are well known. Antillon, professor of geography in the Royal Seminary of Nobles at Madrid, has published maps of different regions of the world, for the use of that academy, with analyses or memoirs, which often present useful and recent information; but the size of each map being only a small sheet, it is to be regretted that they cannot render more essential service. That of North America is however very valuable, from the novelty of the course of some rivers, and the positions of some large lakes in the northern part of the Spanish dominions. More important geographical documents are derived from the new missions on the east of the Andes; and the travels of the missionaries, 1790—1800, related at great length in the *Mercurio Peruano*, and repeated, with additional information, by Estalla, disclose at length the real and surprising course of those prodigious rivers, the Maranon and the Beni, which would convey a frigate to Peru or La Plata. The minuteness of the observations, and the seemingly exact indications of the latitudes and itinerary distances, warranted the new delineation, now first given in the small maps which accompany this work; but it is to be regretted that the map by Sobreviela, one of the missionaries, the publication of which is promised in the *Mercurio Peruano*, has not yet reached England. It is to be hoped however that Bauza, in his new map of South America, will not only insert these grand discoveries, but rectify many errors of La Cruz. Before leaving Spain, it is proper to mention a work which ought ere now to have been translated into English, namely the Spanish voyage to the Western Coast of North America, 1792, published at Madrid, 1802, 4to. with a large and curious introduction concerning the history of the Spanish discoveries.

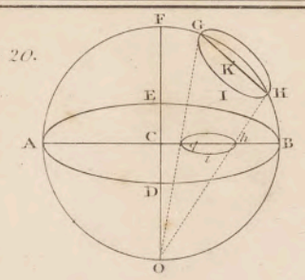
On visiting the North of Europe we shall find a new trigonometrical survey of Holland begun; and that of Denmark by Bygge nearly completed. That of Sweden, by Hermelin, must now be finished. Germany rather publishes criticisms than maps:

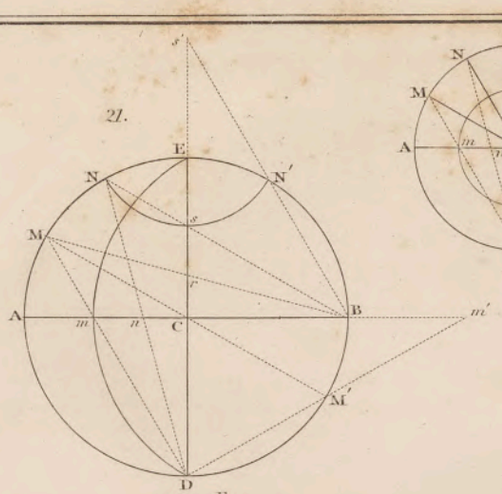
La critique est aisée, mais l'art est difficile:

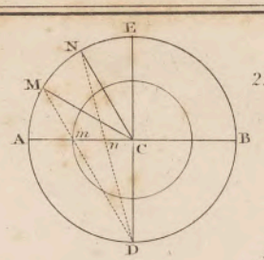
* See Lacroix, Introduction to this Geography, p. lxxiv. lxxv. Fr. Ed. 1804.

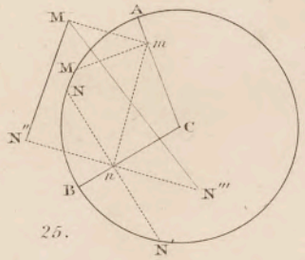
And

And the maps there published have few pretensions to beauty; nor, what is surprizing, is there yet one map of Germany with a just delineation of the mountains. The pretensions of the little observatory at Weimar to geographical improvements are truly ridiculous, and the maps the most coarse and clumsy imaginable. Sotzmann, in Prussia, has however his merit, and has published a map of Germany, since the partition of indemnities, but a new one is already wanted. Reichard has published a very useful guide to travellers, in three volumes 8vo. which presents at one view the chief objects of instruction and curiosity, in every European country. The excellent atlas of Swisserland, by Weiss, is well known. In the second edition of his general map, the northern part of the lake of Constance has assumed a new shape, from recent observations.









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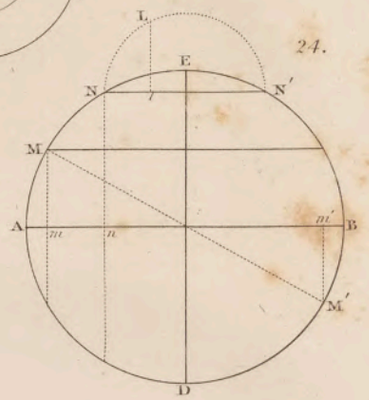

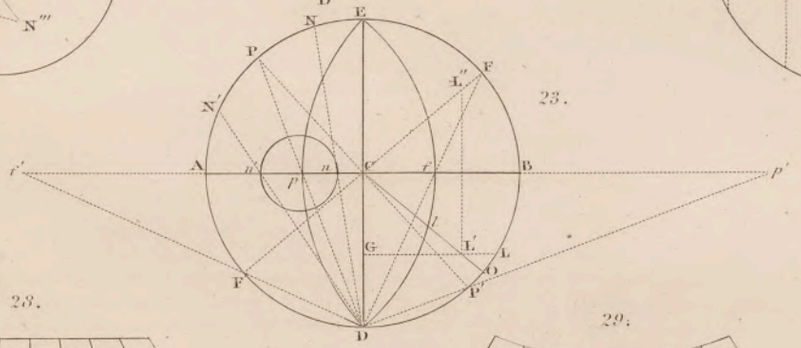

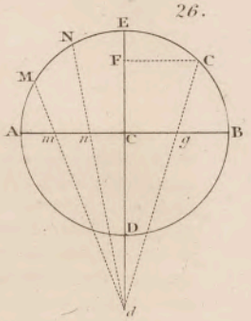

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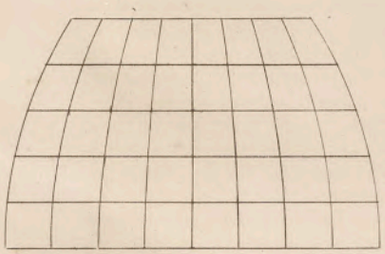

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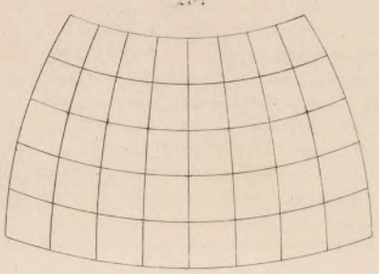

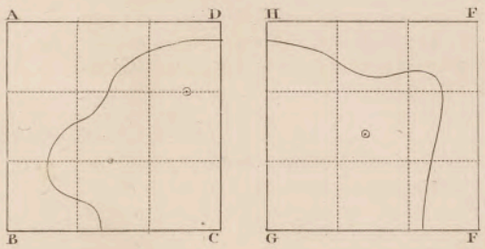

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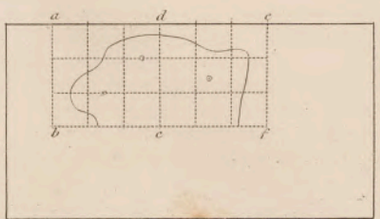

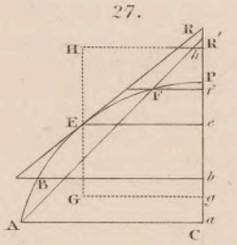

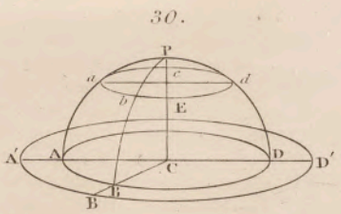

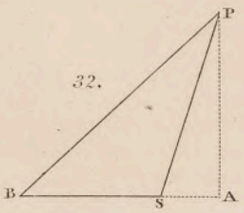

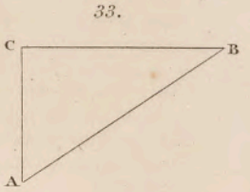

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To be Placed before the Introduction

INTRODUCTION

TO

MATHEMATICAL AND CRITICAL GEOGRAPHY.

TRANSLATED FROM THE FRENCH OF

S. F. LACROIX.

GEOGRAPHY is divided into two distinct branches; one of these may be called *narrative geography*, the knowledge of which is most generally diffused. Like the relations of travellers, it makes us acquainted with the various countries of the earth, their most remarkable physical and topographical circumstances, their form of government, their political division, their commerce, the manners of their inhabitants, and lastly the principal events of their history.

These descriptions, by the aid of language alone, must be necessarily somewhat imperfect and vague, on which account it has been found requisite to add outlines or maps of the countries, not only with a view of rendering the relative positions of the different places apparent to the eye, but also to give that degree of precision which is so often required in navigation, in the military art, in the planning of roads and canals, and many other important objects of civilized society. It is the art of projecting these maps which forms the second branch, not less useful than the preceding one, but less generally understood; and although the principles on which their construction depends, are derived from astronomy and geometry, it is often but imperfectly comprehended, even by those already conversant with these sciences.

For as it often occurs that there are not sufficient data to admit of the application of mathematical principles to fill up the details of a map; we are obliged to have recourse, for this purpose, to the relation of the traveller and the narrative of the historian.

It is not surprising then, that an art which rather seems to depend on the intelligence and skill of the individual than on any general rules, should have been deemed incapable of analysis; and it has therefore been neglected in general plans of instruction.

It is, however, not impossible to obtain possession of the clue which has guided the geographers of the last and the present century in their researches, and thus to complete our geographical treatises, by subjoining to them the elements of the mathematical and critical part of this science, the principal object of which is the construction of charts. And this will be found of great importance; for how can we make use of these designs with any certainty, or appreciate their correctness, when we are totally ignorant of the means by which they have been composed?

These motives have induced me to present to the reader a short essay on this subject, and to depart from the usual plan of introductions prefixed to geographical treatises, which are only the elements of astronomy more or less abridged. I shall begin like the authors of these introductions by a short exposition of the first principles of astronomy, but I shall confine myself to those which are absolutely necessary to give a clear conception how the position of different places on the surface of the earth may be determined by observations of the celestial bodies.

SECT. I. *Astronomical Elements necessary for the Study of Geography.*

1. It must have been remarked by every one who has been placed in a situation commanding an uninterrupted view, that the heavens and earth appear to terminate in a circle of contact, and this circle has been called the horizon.

It is scarcely possible to observe the form of the terrestrial surface inclosed within the circle, because it is almost always broken by irregularities which alter its original figure; but if we stand on the sea shore, we

must observe immediately, that however uniform this surface may appear, it is not perfectly flat; for when a vessel approaches the shore, it is the upper part of her masts that is first perceptible; and the best telescopes would afford us no assistance in rendering the lower part visible. As it advances towards the shore we behold it disengage itself from the horizon, and apparently rise out of the sea. It must then be the convexity of the sea that intercepts the lower part of the vessel from our view; this is represented in fig. 1.

The moment we remark that the surface of the sea is convex, we may easily conceive that the earth participates in the form, setting aside the consideration of its irregularities; and we are induced to consider the whole as spherical, because the geometrical laws of this curve are more simple than those of any other, and the form more pleasing to the imagination.

Other phenomena which we shall describe hereafter have strengthened this conjecture, which has been since verified by voyages round the world. And the last astronomical discoveries, by enabling us to measure the earth with great precision, have proved, that its form approaches so nearly to that of a sphere, that in most cases the difference may be neglected without any sensible error.

The mountains and vallies scattered over the surface of the earth, when compared to its mass, do not alter its figure more than the roughness perceptible on the rind of the finest orange. This assertion will be demonstrated hereafter by calculation.

2. The spherical form of the earth soon conducts us to the explanation of the most apparent motions of the celestial bodies.

The sun at the moment of his rising emerges partially from the horizon; he then seems to describe a portion of a circle in the heavens, and sinks below the opposite part of the horizon when he sets; he then reappears the next day, at nearly the same point where he rose on the preceding one; we may therefore easily conceive that he only disappears because he passes below the horizon, to complete his course round the earth.

If, during the course of a fine night, we observe with attention the motions of the stars, we perceive that some first appear in that part of the heavens where the sun rises, and disappear in the part where he sets; and in our climate during a long winter's night, we may distinguish some which describe more than a semicircle, round another which is remarkable from its apparent immobility; some might even be seen to complete the circle, if the light of the sun by effacing their lustre did not cause them to disappear.

As all the stars appear to revolve in the same direction round one point, we are immediately led to consider this point as the centre of a motion common to all the celestial bodies, and in which the sun himself partakes since he revolves in the same direction as the stars. This was for a long time the opinion of astronomers; they supposed the sun and stars attached to a solid vault which carried them with it in its revolution round the earth, in the space of twenty-four hours. When it was discovered that all the celestial bodies were not at the same distance from the earth, and that many of them approached and receded successively at certain periods, it became requisite to reform the preceding conjecture, and at length they began to imagine that the general motion of the stars might be only an appearance produced by the real motion of the earth in a contrary direction, round a diameter or axis which if prolonged would pass through that star which appeared stationary.

In fact, when we are in a boat passing uniformly, and no abrupt motion reminds us that we are changing our situation, it is the objects on the bank that appear to move in a contrary direction. We may, therefore, easily attribute the motion which we observe in the sun and stars to the earth, and this explanation, which its simplicity alone renders extremely probable, is confirmed by the exact analysis of the phenomena, and by the coincidence of the results we obtain from it with observation.

3. The point round which the heavenly bodies appear to move, is called the *celestial pole*; the star which indicates it, and which is very near it, is the *polar star*; the axis of the earth being directed to this point, marks on the surface of our globe two opposite points, which are the *terrestrial poles*; that which corresponds to the polar star is called the *north* or *arctic pole*, and the opposite one the *south* or *antarctic pole*.

That point of the horizon which is below the north pole is called *the north*, the opposite side is *the south*.

If we suppose a circle to pass through these two points the plane of which shall be perpendicular to the horizon, it will necessarily pass through the two poles; this circle is called by astronomers the *meridian*; it divides the celestial hemisphere above the horizon into two equal parts, so that the stars which are observed on this circle are in the middle of their apparent course, and it is the transit of the sun over this circle that marks the moment of noon.

The line which joins the north and south points of the horizon is called the *meridian line*; if we draw a line perpendicular to it, and suppose it prolonged on both sides till it meets the horizon, it marks on this circle two opposite points, which are called the *east* and *west*, or the points of *rising* and *setting*.

These latter denominations are intended to signify that one of these points is on the side where the heavenly bodies appear to begin their daily course or *rise*, and that the other is on the side where they seem to pass below the same circle, or to *set*, and that their apparent diurnal motion is directed from east to west.

It is proper to remark that when we look towards the south, the west is on our right and the east on our left; and if we mark on a horizontal plane two points in the direction of the polar star, they will determine a line which will differ but little from the meridian line. I shall give hereafter the means of tracing it correctly.

4. To comprehend with precision the remarks contained in the preceding sections, it is necessary to have recourse to a figure.

The circle *MENO*, fig. 2. represents the horizon, in the centre of which, the observer A is placed; *BCD*, *B′C′D′* are portions of the circle which the heavenly bodies seem to describe round the celestial pole. Those whose

whose distance from the pole is less than the arc PN, which marks the elevation of this point above the horizon, appear to describe entire circles, such as $GHIK$; N is the north point of the horizon, M the south; and consequently MN is the meridian line. The semicircle MZN, the plane of which is supposed to be perpendicular to the horizon $MENO$, and which passes through the points MN is the celestial meridian, which divides the arcs BCD, $B'C'D'$ into two equal parts, at the points C C'.

The point E is the east point of the horizon, and the point O the west; the heavenly bodies seem to move from E towards O, and to pass in the middle of their course through some point of the circle MZN.

5. These appearances are now to be explained, and and to comprehend the subject properly the reader ſhould imagine himself removed from the earth, and consider it only as a globe placed in the midst of space supposed to be indefinitely extended in every direction.

Figure 3. represents the terrestrial globe insulated; the point A is the supposed place of the observer, $EMON$ his horizon, and the straight line PP' designates the axis round which the earth performs its motion of rotation from west to east.

It is evident that the horizon of the observer turning with him during the rotation of the globe advances successively towards the stars situated in the direction of its motion, which consequently seem to be moving in an opposite direction to approach him.

The plane MZN of the meridian line NM perpendicular to the horizontal plane $ENOM$ turns also with this latter, and directs itself successively towards the same stars which are then in the middle of the course which they seem to describe above the horizon.

When the western edge of the horizon touches a star it appears to set, and ceases to be visible till the motion of the earth brings the eastern edge of the horizon to it; because during this interval the visual rays which touch the earth pass above the star.

This explanation then applies to the phenomena which take place, in the most correct and simple manner, and occounts perfectly for the daily appearance and disappearance of the celestial bodies, by which circumstance the sun produces the alteration of day and night.

6. A remark very important to be made is, that all the motions alluded to in the preceding sections are only measured by their angles, without any consideration of their absolute distances.

In fact when a star, F, after having appeared in the direction of the visual ray AF in the plane of the horizon, is observed in the direction of the ray AF', in the plane of the meridian, the spectator has only observed the angular space contained between the two straight lines AF and AF, and which appears to include an arc of a circle in the heavens, whose radius it is impossible to estimate.

It follows from this remark, that we may, when we are considering the stars, substitute instead of the tangent plane $ENOM$ a parallel plane passing through the centre of the earth; for when a star placed at G would appear in that horizon which is a tangent to the point A, an observer placed at the centre of the earth, seeing the same star on the line CG, would behold it elevated only by the angle CGn, which is so much the smaller as the point G is farther removed, as we see by the point G. Now the distance of the celestial bodies is so great that this angle is insensible with regard to most of them, and very small for the others.

After what has been said, we may be allowed to substitute fig. 4. instead of the preceding; but let the plane $ENOM$ passing through the centre of the earth parallel to the plane which reaches it at A, or which is the same thing, perpendicular to the radius CA drawn from this point to the centre of the earth, be taken for the horizontal plane, relatively to the stars. Suppose the plane MZN of the meridian to be prolonged indefinitely round C, the centre of the earth, through which it must pass, since it is drawn through the axis PP'. It marks then on the terrestrial surface a circle PAP' passing through the poles, which is called the meridian of the point A, and of all the points situated on its circumference. The horizon $ENOM$ is called the *rational horizon*, to distinguish it from that which is a tangent to the surface of the earth, and is called the *sensible horizon*.

The point Z, which is the point of the heavens perpendicularly over the head of the observer is called the *zenith*, and from the sphericity of the earth the line CZ prolonged downwards indicates another point Z' which is called the *nadir*, it is opposite to the first, and is the zenith of the place A', which is diametrically oppoſite to A.

The position of the right line ZA' which is called the *vertical*, is indicated on the earth by the direction of the fall of heavy bodies, as that of the horizontal plane is by the surface of a stagnant fluid of small extent, to which the vertical or line marked by a plumb-line, is perpendicular.

As the action of gravity tends every where towards the interior of the earth, it acts at A' according to the direction $Z'A'$ opposite to ZA; bodies at this place fall therefore to the surface of the earth, on which men are retained by their weight; those who are at A' having their feet opposite to those at A, are the *antipodes* of the latter.

7. The attentive observation of the celestial bodies soon caused them to be distinguished into two classes, one of which always preserve the same distance and arrangement among themselves, and only seem to be affected by the apparent motion which results from the rotation of the earth on its axis; the others have a motion of their own, relatively both to each other and to the first-mentioned class. These are called *fixed stars*, or simply *stars*; the others are subdivided into different classes, namely, *planets*, subject to motions the periods of which are known, and *comets*, the times of the appearance and disappearance of which vary. These are generally enveloped in a pale and diffused light, which sometimes surrounds them in the form of a crown, and sometimes follows them in a long train of light.

The observation of the fixed stars is one of the most simple means of knowing the relative position

of places situated on the same meridian, and fully confirms what was advanced in the second section concerning the spherical form of the earth.

8. After the definition that has been given of the horizon it may be easily comprehended that it should change its position relatively to the stars, when the observer changes his place. If he moves, for example, from A to A' fig. 5. going directly north or south, following the direction of the meridian, the horizontal visual ray which was $N\,M$ will become $N'M'$, so that a star E placed on the prolongation of this ray, will be elevated above the horizontal ray $N'M$ to A' by the angle $E\,C\,M'$, equal to that formed by the radii CA and CA drawn to the centre of the earth.

In fact the angles $A\,C\,M$ and $A'\,C\,M$ being right angles (section 6.), if we subtract the common angle $M\,C\,A'$, the remainder $M\,C\,M'$ and $A'\,C\,A$ will be equal.

It was by this means that Possidonius having remarked that a very brilliant star, known by the name of *Canopus*, appeared in the horizon at Rhodes, and was elevated above it by a 48th part of the circle, or $7\frac{1}{2}$ at Alexandria in Egypt, concluded that Rhodes was separated from Alexandria by a 48th part of the circle, in the direction of the meridian.

The Greek philosopher also made this important deduction from the same observation; that the distance from Alexandria to Rhodes being known in linear measure, and the proportion that the arc of the meridian included between these two cities bore to the whole circumference, the length of the circumference of the earth expressed also in linear measure might be known. From the length of the voyage, and the space that a vessel could pass over in a day, the distance between Alexandria and Rhodes was estimated at 3,750 stadia, this distance repeated 48 times produced 180,000 stadia for the circumference of the earth.

The accuracy of this result cannot be ascertained, because the value of the stadium in which it is expressed is unknown, and besides it is founded on rather vague estimations; but the principle is the same on which the most exact determinations of the present day are founded.

It is always required to find what is the proportion between the arc $A\,A'$ of the meridian passing through the two points of observation, and the whole circumference; the linear distance between the two places is afterwards measured.

9. By this observation we are enabled to compare a place A with another place A', but to determine absolutely the position of these points, it is necessary to assume a fixed term of comparison.

For this purpose we suppose a plane to pass through the centre of the earth perpendicular to its axis of rotation, which marks on its circumference a circle $G\,E\,F$, fig. 6, of which all the points are at an equal distance from the poles P and P' and which is called the equator. To a spectator placed on this circle the two poles are in the horizon, but as he recedes from it to approach one of the poles, this one becomes elevated while the other is depressed. Thus at A' fig. 5, the pole P appears elevated above the horizon, by the angular quantity $P\,C\,N'$ and at A the angle is augmented by $N\,C\,N'$, and becomes $P\,C\,N$.

The opposite pole P' is depressed on the contrary below the horizon by the angle $M\,C\,M$ equal to $N\,C\,N'$, the angles being vertical.

The angle which measures the elevation of the pole above the horizon, is equal to that which measures the angular distance of a place from the equator, estimated in the direction of the meridian.

To ascertain this, it is sufficient to observe that the angles $A\,C\,N$ and $G\,C\,P$, fig. 6, being right angles, if we subtract the common angle $A\,C\,P$, the remainders $A\,C\,G$ and $N\,C\,P$ will be equal. It may be seen also by the same figure that $M\,C\,G$, the height at which the equator appears above the horizon, is the complement of the angle $A\,C\,G$.

As soon then as the height of the pole above the horizon can be determined for any place, the angular distance of this place from the equator is known, or the number of parts of the meridian intercepted between this place and the horizon.

10. The circumpolar stars, which never set in those places where one of the poles is elevated above the horizon, determine this immediately.

For, since they appear to describe circles round the celestial pole, they are equally distant from it in every direction, and as they pass twice over the meridian during the diurnal revolution of the earth, namely, once above the pole and once below it, if we measure their angular elevation in each of these positions, and take the mean of these two results, we shall obtain the elevation of the pole.

This is shewn in fig. 7; when the star passes the meridian above the pole, its angular elevation above the horizon is $E\,O\,N$; when it is at E' below the pole its angular elevation is $E'\,O\,N$. The angles $E\,O\,P$ and $E'\,O\,P$ being equal, the angle $P\,O\,N$ is the mean between $E\,O\,N$ and $E'\,O\,N$ and is equal, consequently, to half their sum. Moreover, if we take half the difference $E\,O\,E'$ of the angles $E\,O\,N$ and $E'\,O\,N$ measured between the star and the horizon, we shall obtain the angle $E\,O\,P$, which will give the angular distance between the observed star and the celestial pole.

Thus by measuring, for example, at Paris, during a long winter's night, the two meridian heights of the polar star, we find *,

When it passes above the pole	50°	37′	nearly
When it passes below the pole	47	5	
Their sum being	97	42	
The half	48	51	

will be the height of the pole above the horizon of Paris, or the distance of this city from the equator.

* Convinced that the description of astronomical instruments is utterly incapable of conveying any idea to persons who have never seen them, I have thought it adviseable not to introduce any in this introduction. Besides the form of these instruments, the object of which is the measurement of angles, is so variable that it would require a very prolix detail to point out the manner of employing all the different kinds now in use. Moreover, it is known by the elements of geometry, that angles are measured on the arcs of circles, and that two rules moveable round a joint are sufficient to ascertain the direction of the lines which compose them.

If

If, on the contrary, we subtract 47° 5′ from 50° 37′ we shall find for their difference 3° 32′ of, which the half 1° 46′ will give the distance of the polar star from the pole, which, we find, does not exactly occupy this point, but is only very near to it.

11. The knowledge of the distance of a place on the earth from the equator, is not sufficient to determine the position of the place, because the same distance will agree with all the points situated on the intersection of the sphere and a plane parallel to the equator, which intersection gives a circle parallel to the equator, but of which the radius is smaller, and which for this reason is called a *lesser circle*. All the points of this circle can only be distinguished by their meridians, which are different for each of them, and the observation of the celestial motions affords the means of ascertaining them.

The planes of the different meridians PAP', PLP', PMP', &c. fig. 8, all intersect each other in the axis $P\,P'$, and turning upon this line correspond successively to the same star, and between the passage of the same star over any two meridians, a period of time elapses which is to the whole time of rotation as the angle made by these meridians is to two right angles; so that if the first interval can be measured to compare it with the second, we may deduce the angle which the two meridians in question make with each other.

This could be done if we could indicate by a signal visible at the same time to the places under the two meridians the moment when a star appears on one of the meridians; because this instant being marked, a well regulated watch would give the time which elapses between this transit and that of the same star over the other meridian.

If, for example, two observers, one at Paris, the other at Dreux, having agreed to determine on the same day the transit of the same star over the meridian of the city they inhabit, and that a signal given at the moment when the star passes the meridian of Paris, could be visible at Dreux, about four minutes would elapse before the star would pass the meridian of Dreux; this interval being nearly the 360th part of the diurnal revolution of the earth, it follows that the plane of the meridian which passes over Dreux, makes with that of the meridian which passes over Paris, an angle which is the 360th part of four right angles, or the measure of which is a degree.

12. Knowing by this means the angle which the meridian PLP passing through the place L, makes with the meridian PAP' passing through a given place A', the place L will be perfectly determined, if we have, besides, its distance from the equator, EFG, since it is in the intersection of the parallel $L\,M$, drawn at this distance, with the semicircle PLP'.

The distance GL of a place from the equator reckoned on the meridian is called its *latitude*; it is northern when the place is between the pole of this denomination and the equator; and is southern when in the opposite hemisphere.

The angle of the meridians PAP' and PLP', measured by the arcs EG or HL included on the equator, as on the parallel, is the *difference in longitude* of the places A and L, and is called the *longitude* of the place L, when the same circle PAP is the principal meridian, which is made to pass through a place assumed arbitrarily.

The preceding method pointed out for its determination is only practicable in general by taking a celestial phenomenon for the signal; because, for a signal to be perceptible in two places at the same time it should be so much the more elevated, in proportion as the places are farther asunder. As the phenomena employed for this purpose result from the motions peculiar to the planets, I shall give some account of these motions.

13. Besides the diurnal motion which the sun has in common with the stars during the course of the year, he seems to advance alternately towards one or other of the poles; moreover if we compare him with the stars, by observing one which sets a little time after him, we find that the interval between these two phenomena diminishes every evening, and we soon cease to perceive the star, being effaced by the light of the sun, which consequently is advanced towards the east; a few days afterwards the same star reappears in the east, a short time before sun rise; the interval between his rising and that of the star augments every day, and after a period of about 365 days the star and the sun are found to be in the same relative position in which they were originally observed. The sun then appears to be influenced by two motions, one whose direction is from south to north, then from north to south, and the other from the west towards the east.

These appearances may be explained with great simplicity, by attributing to the sun one motion alone, which is repeated every year or *annual*, and which is performed in a plane inclined to the axis of the earth, since he approaches both the poles alternately. But the circumstances of the motion of the other planets do not yield readily to any plausible explanation, when we consider these bodies as moving round the earth; whereas by supposing them to move round the sun, and by attributing also to the earth the apparent annual motion of this body, the combination of these two absolute motions, gives to each of the planets, as seen from the earth, a relative motion, which agrees perfectly with all the phenomena they present, and is capable of explaining them with the greatest precision.

It was by this means that Copernicus restored to the system of the world the simplicity and correctness which it had entirely lost by the multiplied efforts which the partizans of the theory which supposed the earth immoveable, had made after Ptolemy, to explain how the planets should appear sometimes stationary, and at others change their direction.

Copernicus supposed then, that at the same time nat the earth turned on its axis from west to east in the interval of a day, (section 5.) it was carried in space from east to west, making an entire revolution round the sun in a plane inclined to the equator, during the interval of a year.

We have every day before our eyes a multitude of examples of these two simultaneous motions in the same body.

The top with which children amuse themselves is one of the most familiar; while it turns rapidly upon the iron peg that passes through it, and which forms

its axis, it also describes on the ground various curves, which depend on the manner in which it was originally projected: a bowl that has been struck in a direction not passing through its centre, acquires a rotatory motion on itself, besides the progressive motion which results from the impulsion it received.—These elucidations ought to suffice to render intelligible what follows concerning the two motions of the earth.

14. To conceive how the phenomena of the sun's apparent change of place are produced by the annual motion of the earth, it is only requisite to obferve the consequences produced by the parallelism which its axis preserves in all the positions it successively occupies.

This axis, which is inclined to the plane in which the centre of the earth moves round the sun, remaining always parallel to itself, presents alternately each of its extremities, or poles, towards the sun. This may be seen by fig. 9, where the lines PP' parallel to each other represent the axis of the earth, and S the centre of the sun. This parallelism causes the pole P, which is nearest to the sun when the earth is at B, to become the most distant from it when the earth is at D; because, in the first situation, the inclination of the part BP of the terrestrial axis is turned within the curve $ABCD$, while at the point D it is on the outside of it; there are two intermediate points, A and C, in which the axis PP' does not incline either towards the sun or from it; and the line CSA, which joins the centres of the sun and earth in these two opposite positions, is perpendicular to its axis PP'.

In all the other points of its orbit $ABCD$, the terrestrial axis must necessarily incline either towards or from the sun; and as it is these two positions which produce the seasons, I shall consider them separately.

15. Figure 10 relates to the case in which the pole P is nearest to the sun.

The distance from the sun to the earth being very considerable, in proportion to the diameter of the latter, his rays may be considered as parallel to the line SO, which joins the centres of these two bodies; we perceive immediately that the terrestrial surface is divided at every instant into two parts; that which is towards the sun being enlightened, while the opposite side is in obscurity. The boundary which separates these two parts is determined by the great circle ILK drawn perpendicular to the line SO; for it is evident that this circle surrounds that part of the earth which is turned towards the sun, and that the rays of light, such as SI, SK, which touch its circumference, are only tangent to the surface of the globe; this circle is called the *circle of illumination*.

It follows then that the equator ELF, being a great circle, is divided equally by the circle of illumination; every point in the equator paſſes successively through that half of its circumference which is included in the enlightened part of the earth, and consequently receives the rays of the sun during half the time of the rotation of the earth. This is the cause that to all the places situated on this circle (the equator) the days and nights are equal, on which account it is sometimes called the equinoctial line. The circle of illumination divides the lesser circles described by the points of the arc PE more unequally in proportion as they approach the pole; the enlightened part of these circles is the largest: to all these places therefore the duration of the day surpasses that of the night; and this difference increases as the places are situated nearer the pole, till there is no night to the space inclosed within the circle IK described by the point I, through which the solar ray passes as a tangent to the earth, and the nearest to the pole P, because this circle lies entirely in the illuminated hemisphere.

This order is totally reversed with regard to the other hemisphere EPF. Beyond the equator ELF, as we approach the pole P', the circles parallel to the equator, which are unequally divided by the circle of illumination ILK', have their greatest portion in obscurity; the duration of the nights therefore surpasses that of the days more and more as we approach the poles, and the region contained in the circle $I'K'$, described by the point K', being altogether in the unenlightened hemisphere, has no day.

The radius SO being directed towards the centre of the earth, falls perpendicularly on its surface, and the point PH turning round the axis PP', describes a circle HG, all the points of which pass in succession perpendicularly under the sun; on each side of this circle, the solar rays become more and more oblique, and are horizontal on the circles IK and $I'K'$, where they are only tangents to the surface of the earth.

It follows from thence, that the sun attains a greater altitude above the horizon, in proportion as the horizon is nearer to GH.

16. In figure 11, where the part OP of the terrestrial axis is inclined in the opposite direction relative to the sun, what we have said concerning the hemisphere EPF must be applied to the hemisphere $EP'F$, and *vice versa*. It is in the latter that the days are longer than the nights, and the sun is vertical over the points of the circle $G'H'$; the contrary takes place in the hemisphere EPF.

17. When the earth is at A or C, fig. 9, the solar ray SC or SA, directed towards the centre of the earth, being perpendicular to the axis PP' (sect. 14.), this axis is in the plane of the circle of illumination, which then bisects not only the equator, but all the circles parallel to it, so that the enlightened portion is equal to that in shadow. In this position the duration of day and night is equal at every part of the terrestrial surface. The points A and C, and the periods at which the centre of the earth is in these points, are therefore called equinoxes.

The time employed by the earth in passing from the point A to B, during which the pole P approaches nearer and nearer to the sun, is the astronomical spring to the hemisphere EPF, because the plane of the equator becoming more and more depressed with regard to the sun, this body appears elevated towards the pole: when arrived at B, the semi axis BP of the earth having the greatest possible inclination towards the sun, he appears at the least distance from the pole P, and it is at this point that the summer of the hemisphere EPF commences.

As the situation of the axis changes very little for some days to the places near the point B, it has been called the summer *solstice*. This season lasts till the earth

earth arrives at the second equinox *C*, when the autumn commences: then the pole *P*, being the farthest from the sun, this body, becoming more and more depressed, returns into the plane of the equator. After his passage through the point *C*, the semi-axis *CP* turning its inclination more and more to the side opposite to the sun, he continues to appear more and more depressed below the horizon till the earth reaches *D*, the place where the inclination of the semi-axis *DP'* is directly opposite to the sun, which has consequently attained the limit of its depression below the equator. At this point the winter commences to the hemisphere *EPF*, and the axis remaining also many days in nearly the same situation, the point *D* has been called the winter *solstice*.

The duration of this season is defined by the time employed by the earth to return to the point *A*. During this interval the pole *P* approaches the sun, which consequently appears to reascend towards the equator, which it reaches when the earth is at *A*, when it has finished its annual revolution.

With regard to the opposite hemisphere *EP'F*, the seasons follow a contrary order; the spring of this hemisphere corresponding to the autumn of the other; the summer to the winter; the autumn to the spring; and the winter to the summer.

18. In the early state of astronomy, the apparent motion of the sun was referred to the groupes of fixed stars or constellations which he seemed to traverse successively, the number of which is twelve. The space the sun traverses in a season includes three of them; their names and the characters employed sometimes to represent them, beginning at that where the spring equinox takes place, are

♈ Aries	♉ Taurus	♊ Gemini
♋ Cancer	♌ Leo	♍ Virgo
♎ Libra	♏ Scorpio	♐ Sagittarius
♑ Capricornus	♒ Aquarius	♓ Pisces.

They are also called the signs of the *zodiac*, because they occupy that band or zone on which the planets anciently known, which deviate but little from the ecliptic, were always found; but the planets recently discovered by Messieurs Piazzi and Holbers have orbits exceeding very much the limits assigned to the zodiac, particularly the one last discovered.

By the effect of a particular but very slow motion of the axis of the earth, the constellations no longer correspond to the same points of the terrestrial orbit; and as, besides, they differ from each other in their extent, the name of signs has been given to the twelve divisions of the circle which measure the entire revolution of the earth; each of these divisions comprehends 30 degrees; and at present the signs of the zodiac are distinguished from the constellations, this latter denomination being particularly applied to the groupes of stars.

By this arrangement the spring equinox corresponds always to the first point of the sign aries; the summer solstice to the first point of cancer; the autumnal equinox to the first point of libra; and the winter solstice to the first point of capricorn.

19. In appearing to approach alternately to both poles, the sun passes successively over the zenith of all the points included within the two circles *GH* and *G'H'*, fig. 10 and 11, parallel to the equator, and over which it is vertical at the summer and winter solstices.

These limits at which the sun seems to stop in each hemisphere are called *tropics*; that which corresponds to the summer solstice is the *tropic of Cancer*, and the other the *tropic of Capricorn*.

The circles *IK* and *I'K'*, which terminate towards each pole that part of the earth which the sun enlightens when he is in the opposite hemisphere, are called *polar circles*, and are distinguished by the name of the pole to which they belong: the one is the *arctic polar circle*, and the other the *antarctic polar circle*.

The polar circles and the tropics divide the surface of the earth into five portions, called zones; those which are included in the polar circles, being deprived of the sun during a great part of the year, and always receiving his rays very obliquely, are called *frigid zones*.

The zones included in each hemisphere between the polar circles and the tropics never have the sun vertical, but receive his rays less obliquely than the frigid zones, and are called *temperate zones*.

Lastly, the space between the tropics, over every point of which the sun is vertical twice a year, and to which the rays are always less oblique than to any other part of the globe, suffering on this account a considerable degree of heat, is called the *torrid zone*.

The constant presence of the sun over this zone, and the force of his rays, which fall almost perpendicularly upon it, ought at length to communicate to the earth a heat sufficiently powerful to extend to the interior, even as far as the poles, and to produce that uniform temperature which is preserved in caves and deep mines, notwithstanding the alterations of heat and cold which take place on the surface of the globe, whether by the greater or less degree of obliquity in the rays of the sun at the different seasons of the year, or by the effect of meteorological phenomena.

20. The ancient geographers established a division of the earth into *climates*, founded on the comparative duration of the day and night at the summer solstice. The first climate commenced at the equator, where the days, equal to the nights, are each 12 hours, and terminated at that parallel of latitude on which the longest day is 12 hours 30 minutes; the second climate terminates at the parallel, on which the longest day is 13 hours, and so on in succession for every half hour of increase in the duration of the solstitial day, as far as the polar circle, where the day contains twenty-four hours. After this boundary the difference of climate was reckoned by months, because each pole passes the whole interval between the equinoxes, or six months, in the sun's light, and six months in darkness; and the intermediate points are enlightened for a longer or shorter time, according to the distance they are from the pole. The first climate, reckoned by months, terminates at the parallel of latitude placed at the polar circle, all the points of which are exposed to the sun for a month, and thus on to the pole, where day lasts six months of the year, and night the other six months.

21. The different distribution of the seasons in the northern

northern and southern hemispheres, was the cause of the inhabitants of the earth being ranked under denominations which are no longer in use, but which ought to be known, because they are met with sometimes in rather ancient authors.

The people who are situated, one to the south and the other to the north of the equator, but under the same meridian, and the same latitude in each hemisphere, are *Antæcians;* they reckon the same hours at the same moment, but are in opposite seasons.

Those who are on the same side of the equator, but under opposite meridians, are *Periæcians;* they reckon opposite hours at the same instant, it being midnight with one when the others are at noon, and *vice versa*, but being both in the same hemisphere they have the same seasons.

The ancient geographers have also established a division of the inhabitants of the earth from the situation of their shadows. They called *Heteroscians*, those who are placed in the temperate zone, because their shadow is always turned towards the pole.

Periscians, those who, inhabiting the frigid zones, and enjoying the presence of the sun during one period of the year for 24 hours, behold this body revolve round their horizon and project their shadow in every direction.

Amphiscians or *Ascians*, the inhabitants of the torrid zone, whose shadows at noon are alternately projected towards either pole.

By thus turning their attention to consider local phenomena, they establish three situations of the *sphere*, that is to say of that assemblage of various circles, of which I have spoken, and to which we refer the positions of the stars.

They said that to the inhabitants of the equator the position of these circles was that of a *right sphere*, because the plane of the circle then passing through the zenith is perpendicular to the horizon, and that consequently the stars, which in their diurnal motion seemed to describe circles parallel to the equator, appear to rise and descend perpendicularly to the horizon.

To the inhabitants from the equator to the poles, as the circle cuts the horizon obliquely, the sphere is *oblique*, because the diurnal motion of the stars is inclined to the horizon. Finally, at both poles the horizon is the equator itself; and the stars seem to move parallel to this circle, the inhabitants, therefore, of these two points, have the *sphere parallel.*

22. The extent of the zones and climates is determined by the inclination of the axis of the earth to the plane of the ecliptic; and this inclination is discovered by observing at the same place the greatest and least altitudes of the sun when it passes the meridian at the summer and winter solstice.

For since it deviates equally on each side the equator, at both these periods the points of the equator ought to pass the meridian at the mean altitude between the two extreme altitudes of the sun, and their difference is double the angular distance by which the sun is elevated and depressed above and below the equator; we determine therefore at the same time this quantity and the position of the equator to the horizon, which gives the latitude of the place of observation.

At Paris, for example, the altitude of the sun above the horizon is 64° 38′ at the summer solstice, and only 17° 42′ at the winter solstice.

	64° 38′
	17 42
The sum of these altitudes is	82 20
The half	41 10

gives the altitude of the equator above the horizon at Paris, and taking the complement to 90° we find that the distance from the equator to the zenith or the latitude of Paris is 48° 50′. Subtracting one from the other.

The altitudes	64° 38′
	17 42
We find the difference	46 56
And the half	23 28

gives the arc by which the sun deviates from the equator towards either pole.

This arc, which measures the angle *FOH*, fig. 10, measures also that which the plane of the equator and ecliptic make with each other, or the *obliquity* of the ecliptic with regard to the equator.

The complement of the angle *FOH* is the angle *POH* which measures the inclination of the terrestrial axis *OP* on the plane of the ecliptic represented by the line *OS*, and taking 23° 28′ from 90° we get 66° 32′.

It is to be remarked also that the arc *IP* which measures the distance of the polar circle *IK* from the pole *P*, being the complement of the arc *PH*, and consequently equal to *FH* is 23° 28′; the complement 66° 32′ of this arc expresses the value of the arc *IE*, or of the latitude of all the points of the polar circle.

The latitude of the tropics *GH* and *G′H′* is equal to the arc *EG* and consequently is 23° 28′.

23. We may deduce from these results the extent of the different zones. The frigid zones include 23 28′ of latitude on each side the pole. The temperate zones, or the space between the polar circle and the tropic, or between 66° 32′ and 23° 28′ of latitude extend 43° 4′; finally the torrid zone terminated by the tropics at 23° 28′ distance on each side the equator, includes 46° 56′ of latitude. From these data, by the assistance of elementary geometry, the superficies of these zones may easily be calculated, and it is found that 83, 519, 796, represent respectively, the frigid zone, the temperate zone, and the torrid zone, or taking the whole area of the globe as unity,

The frigid zones occupy	$\frac{83}{1000}$
The temperate zones	$\frac{519}{1000}$
The torrid zone	$\frac{398}{1000}$

These dimensions are not constant, for observation and the calculation of the causes which produce the planetary motions have proved that the inclination of the terrestrial equator relatively to the ecliptic diminishes every century by 50″, till it arrives at a term which is not yet exactly ascertained, after which it will begin to increase.

24. It

24. It is by the apparent motion of the sun that time has been regulated.

The duration of the *astronomical day* is marked by the period that elapses between two consecutive transits of the sun over the meridian of the same place, it is divided into 24 hours; the *tropical year* is the period between the passage of the sun through one of the equinoctial points and its return to the same point; it includes 365 days 5 hours, 48′ 48″.

As the position of the equinoxes on the plane of the ecliptic depends on the situation of the terrestrial axis, it changes relatively to the stars in consequence of a slight motion of this axis, so that the equinoctial points retrograde about 50″ a year, with reference to the stars which constantly appear to advance this quantity in the direction of the ecliptic, and this circumstance prolongs a little the annual revolution of the earth, when compared with the stars; it is then called the *sidereal year*, and its duration is 365 days 6 hours, 9′ 12″.

The revolution of the earth is performed in a period rather less than 24 hours, because in this space of time the earth not only describes one revolution but as much more as is requisite to bring the same terrestrial meridian to the sun, and which angular space is equal to that which it describes in the same time in a contrary direction in its annual revolution round the sun; so that the interval between two transits of a fixed star over the same meridian which measures the real duration of the terrestrial rotation, is only 23ʰ 56′ 4″. From this difference the stars appear to gain upon the sun every day about 4′ of time in their transit over the meridian.

The period of the rotation of the earth is always uniform, but it is not thus with the duration of the day, which is composed, as we have just said, of the time of its rotation, and of that which it employs to describe round its axis, an angle which compensates the quantity which it has turned round the sun by the effect of its annual motion; for this other motion which is not performed in a circle but in an ellipse, of which the sun occupies one of the foci, is not uniform, and takes place in the plane of the ecliptic, which is inclined to that of the equator. From the concurrence of these causes the duration of the day, compared with that of the rotation of the earth is sometimes less and sometimes greater than 24 hours; and the series of these differences constitutes what is called the *equation of time*, which must, in some seasons be added and in others subtracted from the hour marked by a clock regulated by the sun or *true time*, to obtain *mean time*, to which astronomical tables refer, and by means of which we at present calculate with great precision the motions of the heavenly bodies, and particularly those of the sun and moon.

25. The last mentioned body is considered as a satellite of the earth, because revolving round it, it accompanies the earth in its revolution round the sun.

The revolution of the moon round the earth, when referred to the equinoctial points, is accomplished in 27 days 7 hours 43′ 4″; but when compared with the sun, which during this time appears to advance in the same direction, it employs 29 days 12 hours 44′ 3″ to pass through the whole circumference of the heavens, with the space described by the sun added. This is the *synodical revolution* or the lunar month, which begins at the moment when the moon is directly between the sun and earth, which is called *in conjunction*. This aspect is represented in fig. 12, where S is the sun, T the earth, and L the moon.

During this revolution the moon assumes relative to the sun all possible situations, from which result her different appearances or phases; in fact, the moon being an opake body like all the planets, can only be seen when she reflects to the earth the luminous rays received from the sun, and it is requisite for this that she should turn towards us at least a portion of that hemisphere which being directly opposite to the sun is enlightened by it.

The moon then only becomes visible to us when having passed the point L' she begins to turn towards the earth a portion or segment of her enlightened disk, which increases as she separates from the sun to pass to the other side, L'', the earth then being between the sun and moon sees the whole enlightened hemisphere of the lune, which in this state appears full or in *opposition* to the sun.

The conjunction and opposition of the moon with regard to the sun, or the new and full moon, are the *syzygies*. When the moon is distant from the sun by a quarter of her orbit, as at L' and L'', she is in *quadrature*; we then only perceive half her enlightened hemisphere. It is called her first or last quarter according as her convexity is turned to the west or east.

26. This explanation of the phases of the moon seems immediately subject to a difficulty which leads to the cause of eclipses.

We are tempted to believe that the moon ought always, when she is in conjunction with the sun, to conceal his disk totally, or at least partially; and when it is in opposition, to be immersed in the shadow which the earth carries behind it, and ceasing to be enlightened by the sun should become invisible. There would take place in the first case an *eclipse of the sun*, and in the second an *eclipse of the moon*.

These phenomena, in fact, often take place under the circumstances I have described, and indeed often in a year; but they do not happen at all the new and full moons, because the orbit described by the moon round the earth not being in the same plane with that of the earth round the sun, it happens most frequently that the conjunction of the moon is a little above or below the sun, and a little above or below the shadow of the earth at the opposition.

However as the orbit of the moon intersects the ecliptic in two points called *nodes*, its conjunction and opposition which may happen at the points of her orbit, sometimes take place near the nodes, and then there is an eclipse of the sun or moon.

To explain this circumstance better, I have joined to fig. 12, which represents the orbits of the earth and moon on a *geometrical plane*, fig. 13, which shews the *section* or *profile* following the line ST. This line ST, represents the plane of the ecliptic, and LL'' that of the lunar orbit. The inspection of this figure is sufficient without any explanation to shew when there will or will not be an eclipse. Besides the detail of these circum-

circumstances and of the calculation of eclipses belongs to astronomy, and I have only to speak of that science as far as regards the observation of these phenomena, for the purpose of ascertaining the longitude of a place on the earth.

27. It has been already seen (11) that this depends on the determination of the time reckoned at the same instant in two different places, by the observation of an instantaneous phenomenon that can be observed at both points.

The eclipses of the moon accomplish this perfectly; for a given point of the lunar disk is immersed in the earth's shadow at the same instant to all the places where the moon is visible.

And the spots scattered over its disk afford the means of making many observations during the same eclipse, by marking carefully the time of the disappearance of each spot at its entrance into the shadow or *immersion*, and that of its coming out of the shadow or *emersion*. If the same observations have been made at a place the position of which is known, the difference between the time determined at each place by the same phenomenon gives the difference of longitude. If all the results do not exactly agree, the mean must be taken.

It is not always necessary to have observations corresponding to those made at the place, the longitude of which is to be determined. If the point is very distant and has not yet been determined with great precision the calculations made in good almanacks such as the *Conaissance des tems* of the French, or the *Nautical Almanack* of the English, are sufficiently exact to supply the place of those observations which we are deprived of.

It is thus that the eclipse of the moon on the 30th of July, 1787, observed by the astronomer Beauchamp, at *Casbine*, a place situated in the vicinity of the Caspian sea, enabled Mr. Lalande to determine the longitude of that place.

The end of the eclipse or the total emersion of the lunar disk took place at Casbine at

	$7^h\ 45'\ 30''$ solar time
And the calculation for Paris gives	4 36 38
The difference	3 8 52

corresponds to the difference of the meridians of Paris and Casbine. If we convert it into degrees at the rate of 15 to an hour, which gives 15 minutes of a degree for a minute of time, and 15 seconds of a degree for a second of time, we find

For 3^h	45°
For $8'$	2°
For $52''$	$13'$
Total	47 13

This, then, reckoning from the meridian of Paris, is the longitude of Casbine, resulting from the above observation.

There may be some uncertainty in this result, not only because there was no corresponding observation at the place, the longitude of which was known, but also, because we cannot be certain within a few seconds of the phases of an eclipse of the moon, and that 4″ of time give a minute of a degree. Notwithstanding this imperfection the observation of lunar eclipses ought not to be neglected whenever an occasion occurs, when we travel in a country of which the latitudes and longitudes are but little known, because the means of determining the longitude are few, and have all some degree of uncertainty.

From what has been said the reader should comprehend, that if among the planets which, like the earth, describe orbits round the sun, there should be any with satellites revolving round them, these bodies being in similar circumstances to those which produce eclipses of the moon, will be immersed in the shadow of their planet; and if their disappearance and reappearance could be observed in different places at the same time they would enable us to determine longitudes in the same manner as the eclipses of the moon.

This is the important use to geography that is made of the eclipses of the four satellites that accompany Jupiter, a planet remarkable for its magnitude and the brilliance of the light which it reflects to us. There are also two other planets, Saturn and Herschel, which are accompanied by satellites, but their minuteness and distance rendering them scarcely perceptible but in the most powerful telescopes; the observation of their eclipses is hardly practicable.

The utility of the eclipses of Jupiter's satellites has induced astronomers not only to observe assiduously all those which are visible, but also to calculate tables to predict them, with such exactness that, like the lunar eclipses, the corresponding observations are not requisite.

28. The solar eclipses are also employed in the determination of longitudes; but the calculation is not so simple as for eclipses of the moon; they can only be performed by those very conversant with astronomy; Mr. Lalande, by paying great attention to this subject, has, by means of them, rectified the positions of a great many important places.

The cause of the difficulty of this calculation is, that the relative situations of the sun and moon are not the same at all the points of the earth where these two bodies are seen at the same time.

What takes place on this occasion may be observed with the clouds, which, when seen from a particular point, appear under the sun, and cast their shadow over a limited space, out of which the whole disk of the sun may be seen. A spectator on the edge of the shadow perceives a part of the sun's disk, and the different appearances change every instant by the effect of the relative motions of the sun, the cloud, and the spectator.

To apply the observation of an eclipse of the sun to finding the longitudes of places, it is requisite to have different phases determined as the beginning and end, and from thence deduce the middle; the data proper to ascertain the respective position of the lines traversed by the centres of the sun and moon during the eclipse must be taken from the astronomical tables, to enable us to calculate the instant when these two bodies were in conjunction. Knowing the hour when this happened

at

at a given place, we deduce from the difference of these times the difference of longitude.

It often happens that the moon eclipses the fixed stars; and by determining from observation of the circumstances of this phenomenon which is called the *occultation*, the moment when the centre of the moon is in conjunction with the star, which ascertains the absolute position of the moon, we may, either by calculations made for this purpose in the astronomical almanacks or by corresponding observations, find the time of this conjunction, at a place the position of which is known, and the difference of longitude is found as in the preceding cases.

29. The object of all these methods, in fact, is this: to determine at the place, the longitude of which is required, the position of a celestial body at a given instant, and to deduce from this position the time which is reckoned at the same instant at a place whose position is known. It may be perceived by this description of the problem that the celestial body should have relatively to the earth a motion sufficiently rapid, that its position with regard to the fixed stars or other celestial bodies that serve as a term of comparison, may vary considerably in the space of 24 hours.

The moon is most proper for this purpose, because as it travels nearly 13 degrees a day, one minute of a degree in its change of place corresponds to rather less than two minutes of time, or 30 minutes of a degree of longitude; and as we may by taking the angular distance between the moon and the stars or sun, ascertain its situation with the greatest precision, the time reckoned under a given meridian at the moment of observation may by this means be determined within two minutes.

This operation has been so much facilitated by instruments of very accurate construction, by tables, and by various formula contrived for this purpose, that it can be performed almost daily at sea, which has considerably advanced our knowledge of geography, especially since by the example of Cook we have adopted the use of *time-keepers*, or chronometers, which serve in the intervals when the distances between the moon and sun or stars cannot be observed.

30. The use of time-keepers alone would be sufficient if they could be constructed with such perfection that being once set to the hour under a given meridian they would preserve the same motion during the whole voyage; because they would then always mark the time at that meridian, which being compared with the time at the place required, would give the difference of time, and consequently that of the meridians.

But if the exertions of Harrison, of Julian le Roi, of Berthant, and of all the celebrated artists who have endeavoured to bring to perfection this useful piece of mechanism, have failed in rendering the motion of chronometers thus perfectly uniform, they have at least approached so near it, that these chronometers do not vary perceptibly for a considerable interval of time, notwithstanding the agitation which the sea produces in the vessel.

31. By considering what has been said above we may form a very complete idea of the means of fixing the position of different points on the earth by their latitude and longitude, which geography derives from astronomy. We arrive at these results with the greater exactness in proportion to our precision in the observations, and in the calculations which arise from them. To avoid rendering too complicated the explanation of the principles on which the methods which I have summarily explained depend, I have avoided pointing out many corrections necessary to free the observations from the effects of some optical illusions which affect them, and from the combination of some slight motions, both real and apparent, which the progress of astronomy and the profound knowledge of the laws of the system of the world have enabled us to know and appreciate.

These are the most simple:

We know that a ray of light passing from one medium into another of greater density suffers a *refraction*, because it approaches to the perpendicular to the surface of the strata which it successively traverses. For this reason the heavenly bodies are never seen in their real places; the ray which renders them visible to us elevates them above the horizon, by a quantity so much the greater as they are nearer to this circle, and which also depends on the state of the atmosphere at the time of observation. This quantity should be known for each degree of altitude above the horizon, that it may be subtracted from the observed, which is always greater than the real altitude, except in the case where the object is in the zenith; because then the ray of light, traversing the atmospherical strata perpendicularly, does not suffer any refraction. It has been remarked (8) that the observation of altitudes was always referred to the centre of the earth, considering the rays of light as all coming to the earth in parallel directions, and consequently neglecting, from the confiderable distance of the stars from the earth in proportion to its radius, the angle *AGC* (fig. 3); but the planets are so sufficiently near to the earth for it to be requisite, particularly when great accuracy is required, that this angle should be taken into consideration. Its effect is to depress the object below its real situation with regard to the centre of the earth. A star at *G*, for example, would appear at the point *A*, in the horizon, while at the centre of the earth it would be elevated by the angle *GCN*, equal to *AGC*, because the lines *MN* and *mn* are parallel. The angle *AGC*, formed as we see by the direction of the lines in which the star would be seen from the centre of the earth, and from a point on its surface, is called *parallax*. It changes with the altitude of the star, and becomes nothing in the zenith, because the centre *C* and the , the place *A* and the star are then all on the same straight line; but it is a maximum in the horizon; it amounts to 8″ 6 for the sun, and for the moon it varies from 54′ to 62′, according to its different distances from the earth. It is the exact determination of this angle, for the sun and moon, that has made us acquainted with the absolute distance of these bodies from the earth, from whence, by the laws of Kepler, the distances of the other planets have been deduced.

The effect of parallax being contrary to that of refraction, it must be added to the observed altitude to bring it to; and it should be taken into consideration as well as refraction, in all angles observed or calculated that depend on altitude.

It is the difficulty of appreciating the effect of these corrections, on the apparent distance of the moon from the sun or stars, to convert it to the real distance, that renders the calculation of the longitude by this method so complicated.

When the situation of a celestial body, such as the sun or moon, whose disk has a perceptible diameter, is required, it is the limb that we observe, and the semi-diameter must be added or subtracted from this to get the position of the centre; because this is the point always given in astronomical calculations.

32. By the assistance of these corrections, for which there are tables ready constructed, we can determine with precision the real altitude of a celestial object above the horizon. If we take it on the meridian, and its distance from the equator is known, we may deduce the latitude of the place.

The tables of the sun's motion, or the ephemerides of this body, which are previously calculated, give its distance from the equator, or *declination*, for every day in the year.

We may therefore find the latitude of a place at any time, because we get the height of the equator above the horizon, by subtracting the sun's declination from its altitude if it is above the equator, and adding it if it is below; a circumstance that we may always ascertain by the situation of the shadow and by the season.

After having found, *a priori*, either by the method described in 10 or in 22, the latitude of their observatory, astronomers have endeavoured to determine the distances of the principal fixed stars from the equator, and the time which elapses between their respective transits over the meridian, and the point of the ecliptic corresponding to the vernal equinox. They have constructed catalogues, in which these results are given, and by the assistance of which we may at any time substitute the stars for the sun in finding the latitude, and which multiply the means of determining this important element of geographical positions.

33. All these observations presuppose the position of the meridian to be known. The polar star indicates it very nearly in the northern hemisphere, but it is the sun's motion is the most convenient way of ascertaining it with any degree of accuracy.

For, on the day of the solstice, the sun, which does not change its distance from the equator perceptibly, seems to describe a circle parallel to it, and of which the portion *BCD*, *fig.* 2, included above the horizon, is divided equally by the meridian; it therefore follows, that its altitude is precisely the same taken at equal intervals before and after its transit over the meridian, and that, reciprocally, if we take the sun's altitude in the morning, and wait for the moment when it returns to this altitude in the evening, the moment of its meridian transit will be the medium between these two.

We may easily comprehend that the length of the shadows of bodies depends not only on their own height, but on that of the sun above the plane on which they rest. If this plane is horizontal, and we raise a vertical *AD* upon it, *fig.* 14, *SD* being the direction of the solar ray, its length will depend on the angle *SCA*, which is evidently the height of the sun above the horizon.

When the sun, therefore, having passed the meridian, is found to be at the same altitude on the other side, in the direction *S'D*, the shadow *AB* of the vertical *AD* will again become equal to the shadow *AC*; and taking the medium between the direction of both, by bisecting the angle *BAC* with the right line *AN*, we shall obtain the meridian.

It ought to be observed, that if we measure at the same time the length of the shadow and of the stick, we may, by the solution of the rectilinear triangle *CAD*, in which the sides *AD* and *AC* are known, calculate the angle *ACD*, or the sun's altitude. We get the meridian altitude if we measure the length of the shadow when it falls in the direction *AN*. It is by this means that the early astronomers got the altitudes of the stars; the extremity of an obelisk, or an opening in an upright wall, gave the vertical *AD*. This simple instrument is called a *gnomon*; but it has been abandoned since instruments have been brought to great perfection, of small dimensions, which measure angles directly by the arcs of circles.

These latter are used even for the determination of the meridian, by combining them with clocks of extreme regularity. For this purpose an altitude of the sun is taken in the morning, and the time marked; we then wait till the same time in the evening, when the sun has the same altitude, and taking the mean of the interval, we get the time which has elapsed between its meridian transit and one, the observations.

If, for example, the clock marked at the same altitude in the morning, 9h 45′ 30″
In the evening 2 23 12

The interval between these two moments being 4 37 42
The half 2 18 51
Added to the time of the first altitude 9 45 30

Gives 12 4 21

for the time marked by the clock at the instant of the sun's transit over the meridian.

By repeating these observations of *corresponding altitudes*, we are able to regulate the clock, and to get very exactly the moment of the sun's meridian transit, from which we immediately deduce the direction of the meridian line.

It is to facilitate the explanation of this process that I have supposed the sun to be at the solstice; because it may be employed at any time of the year, by applying to the result a slight correction for the change of the sun's declination, in the interval between the two altitudes which influences its duration; but this correction is always very small, and may be neglected when we make use of shadows to find the meridian, at least

least if the sun is not very near the equinox, at which time the daily variation in his declination is a maximum.

34. The true time may be found by a single altitude of the sun, or a star, when the latitude of the place and the declination of the object is known, and the position of the meridian may then be deduced. It is done thus:

Two great arcs are supposed to pass through the zenith, fig. 15, through the pole, and through the object.

The first, which is the *vertical*, in which the star is, measures its distance from the zenith; the second its distance from the pole. These two arcs form, with the part of the meridian ZP, comprehended between the pole and the zenith, a spherical triangle, in which the three sides are known; because ZP is the complement of the height of the pole PN; ZS the complement of the real altitude HS; and the arc PS is deduced from the declination of the star, which must be subtracted from the distance of the pole from the equator, or 90°, if the object is between the pole and the equator, or added to this distance if it is on the other side the equator. With these data, and by the resolution of the spherical triangles, the angles PZS and ZPS may be calculated, the same as those of the planes which include the sides ZP and PS, ZP and ZS. The first marks the difference which there is between the meridian of the place A, and that on which the star is at the moment of observation; and if this be reduced into time, it gives the interval that should elapse between the moment of observation and the passage of this star over the meridian; it is called, on this account, the horary angle.

When it is the sun that is to be observed, this time should be added to or subtracted from 12°, according as the observation is made before or after its transit over the meridian. When we observe a fixed star, the time of its tranſit must be calculated, which may be easily done by means of the data furnished by the catalogues already mentioned.

The angle PZS as it gives the angle which the plane ZAN of the meridian of the place makes with the vertical plane ZAH drawn through the star, both perpendicular to the plane MHN, is measured by the angle of the common sections AH and AN of the first and second with the third.

If, therefore, the direction of AH be marked upon the horizontal plane at the moment of observation, the direction of the meridian MN may be deduced.

If ZS be taken 90° the point S will then be at H in the horizon, and the horary angle ZPS will give the difference between the hour of the star's meridian transit and that of its real rising or setting. If the hour of its apparent rising or setting is required, the refraction which raises the object above the horizon, must be added to the arc ZH or 90°, and the parallax which depresses it, subtracted from it.

The angle PZS, calculated according to these circumstances, gives the distance which the star, at the moment when it is in the horizon, is from the north or south point of this circle, according to the denomination of the pole P.

The observation of this distance, which is called the *rising* or *setting amplitude* according as it is observed at the rising or setting, and that of the azimuth or the angle comprized between the vertical ZS and the meridian ZP, are useful to ascertain how much the direction of the magnetic needle varies from the meridian line, in order that the compass may be made use of to find this line.

35. The calculation of the rising and setting of the sun leads to the determination of the duration of twilight, because it is sufficient to augment the arc ZH by 18°, the measure of the depression, after which the rays of the sun reflected by the atmosphere, can no longer reach the surface and produce that faint light which appears before the rising and after the setting of the sun.

By making the preceding calculation for different latitudes and different declinations of the sun, the precise duration of the longest and shortest days, and of the longest and shortest twilights is obtained.

36. The figure and magnitude of the earth is determined by observing the exact difference of latitude between two places, and measuring, with extreme precision, the distance between them, in some standard linear measure. This is one of the most delicate operations of practical geometry. Many attempts to determine the figure of the earth have been made at different periods, but the first that deserves notice was that undertaken by Picard in 1670. This ingenious astronomer (one of the most distinguished members of the academy of sciences), by the application of telescopes to astronomical instruments instead of the plain sights formerly in use, so much increased their power, that he was enabled to determine, within a few seconds, angles which before could only be measured to as many minutes.

The reader who is familiar with the elements of geometry, and acquainted with the method of determining the distances and relative positions of places on the earth's surface, will readily form an idea of the great advantages which science derived from this important improvement, and of the great superiority of Picard's measurement over other operations that previously had been undertaken for the same purpose.

The arc of the meridian, measured by Picard, extended from Malvoisine to Amiens: these places were trigonometrically connected by a chain of triangles (fig. 16), and the equality of three angles of a triangle to 180° offered an obvious method of verification. The observed angles were not always found to equal this quantity, but the very small discordance shewed the errors of the operation to be included within very narrow limits.

The determination of the angles of these triangles gave the relation of their sides to each other, but not their real magnitude; but when the value of one of them is known, the rest are readily determined. To effect this a base was measured, with inconceivable care, on the high road between Villejuive and Juvisy. Its length was 5663 toises: with this line (represented in the figure by AB), and which forms one side of the triangle ABC, the sides AC, BC, were calculated: these were in the same manner employed to determine the sides of the triangles BCD, BCE, connected with the

the former, and thus the whole series of triangles were determined, which connected the extreme stations, Malvoisine and Amiens.

To compleat the operation it was necessary to determine the length of the line which joins these stations, and its situation with respect to the meridian, for the purpose of computing their meridional distance; and, lastly, to ascertain the amplitude of this meridional arc, that is, the number of degrees, minutes, and seconds intercepted by it, by which its relative proportion to the whole circumference is ultimately determined.

This latter part of the operation is entirely astronomical, and requires that the zenith distance of some star should be accurately observed at each station. The star chosen by Picard was a bright star in Cassiopeæ: it was chosen because it passed near the zenith, to avoid the uncertainty of refraction, the effect of which, at low altitudes, was but imperfectly ascertained at that time. The difference of latitude between Malvoisine and Sourdon, near Amiens, was found to be 1° 11′ 57″, which corresponded to a meridional distance of 68,430 toises, and the value of a degree was estimated at 57,064 toises.

The difference of latitude between Amiens and Malvoisine was found to be 1° 22′ 55″, and their meridional distance 78,830 toises, which gives the degree equal to 57,057 toises: the mean ultimately adopted was 57,060 toises.

37. The circumference of the earth, supposed circular, is easily deduced from these data, since every circumference contains 360 degrees: dividing every degree into 20 parts, called marine leagues, each equal to 2853 toises, the circumference of the earth will contain 7200 of these leagues.

It now appeared, that if the figure of the earth was not exactly spherical, it at least differed from that form but a very small quantity. It may be observed that, independently of the remark (No. 2), the circular form of the earth's shadow, in eclipses of the moon, and the spherical appearances of the celestial bodies that admit of examination, seemed to indicate, in a decided manner, the true figure of the earth; nevertheless it might have happened, that a considerable variation from a perfect sphere might have subsisted, which would not easily have been detected. But stronger argument in favour of this hypothesis was deduced from this circumstance, that navigators had always employed one measure of a degree on every part of the globe, without any sensible error; for, had very great variation subsisted, they would easily have perceived it, from their daily practice of comparing their difference of latitude with the estimated run of the ship.

The spherical hypothesis being thus confirmed,

Its diameter, calculated from the computed circumference	2292 leagues.
The radius	1146
And its superficial surface	16,501,200

38. Notwithstanding the exactness of Picard's measurement, astronomy soon indicated methods of ascertaining, with greater precision, the figure of the earth, and likewise a proof of its diurnal rotation; an hypothesis that had long been adopted, to give a more plausible explanation of the apparent motion of the celestial sphere. Huyghens was the first philosopher who, reflecting on the centrifugal force acquired by all bodies turning on an axis (and exemplified in the path of a stone projected from a sling), suspected that the fluid matter distributed on the surface of the globe should necessarily yield to this influence, and that the portion near the equator should become elevated, while that in the vicinity of the pole should become necessarily more depressed. According to the calculation made by this philosopher, the equatorial axis should exceed the polar axis by the $\frac{1}{578}$ part, which corresponds to about four leagues. This hypothesis of Huyghens may be experimentally illustrated by causing a wet bladder to revolve round an axis, when it will be seen to assume a spheroidical figure, flattened at the extremities of the axis on which it revolves.

Newton, who had been led to the discovery of the principle of universal gravitation by meditating profoundly on the laws discovered by Kepler relative to the planetary motions, differed from Huygens in not considering gravity as a force constantly directed to the center of the earth, but resulting from the mutual gravitation of all the particles of which the earth is composed to each other. Upon this supposition he found the force of gravity on the surface would be subject to some small variation, both in direction and intensity; that the figure of the earth would be an oblate spheriod, compressed at the poles and elevated at the equator: but he estimated the quantity of this compression at $\frac{1}{230}$, nearly double that assigned by Huygens.

39. These results, which agree as to the nature, but differ as to the quantity of the compression of the earth's figure, admit of a very satisfactory verification, by means of degrees measured on different parts of the terrestrial meridian; for if this hypothesis be correct, the degrees should be greater in the more compressed parts; that is, at the poles, and less in the most elevated or equatorial regions. This consequence is deduced from principles strictly geometrical, and has never been called in question but by those who have quite misconceived the nature and definition of a degree of meridian. The importance of this subject requires that it should be entered into with considerable minuteness.

It is a fact universally acknowledged, and confirmed by experience, that the direction of gravity, or the *vertical*, is always perpendicular to the terrestrial surface, whatever may be its form. We are assured of this by various means; by astronomical observation, by levelling, and by observing the horizon as bounded by the sea. From this consideration a degree of the meridian may be defined, "*the space which it is necessary to pass over on this curve, whatever may be its nature, so that the two lines AZ, A′Z′* (fig. 17), *drawn from the extremities of this space perpendicular to the curve FG (that is, to its tangents AM, A′M′, which mark the horizon to the two points A and A′), may make with each other an angle, ACA′, equal to one degree.*"

This definition being arbitrary cannot be contested, it only remains to shew, that astronomers have constantly

stantly determined the value of a degree according to this definition; and this cannot be denied, since they always measure the amplitude of the arc by comparing the zeniths of the two extremities with the same star, or the verticals drawn through these extremities.

This being admitted, if the curve FG be a circle, the lines CA, CA', perpendicular to its tangents, will be radii proceeding from the center, and must always meet at the same distance from the curve; and since throughout the whole circumference the same angle will always answer to the same arc, the degrees will all be of an equal length.

It will be very different for curves in which the curvature is not uniform. If two arcs be taken of the same length, as MM', mm' (fig. 18.) the one on the most convex, the other on the most compressed portion of the sphere, then the perpendiculars MC and $M'C$, drawn from the extremities of the first arc will meet nearer to this arc than the perpendiculars mc, $m'c$ drawn through the extremities of the more compressed arc mm'. The angle mcm' is therefore evidently less than the angle MCM', and consequently if this last is a degree, the arc mm' equal in length to MM' cannot correspond to a degree. To obtain a degree in the part mP of the curve we must necessarily comprehend a greater space than MM'.

This manner of conceiving the subject seems sufficiently distinct to obviate every difficulty as to the conclusion which should be drawn from the inequalities of different degrees; for it cannot be denied that they must be greater where the curvature of the meridian is most compressed, and smaller where it is most convex. About the beginning of the last century a misconception prevailed with some writers, from not sufficiently attending to these considerations, and the opposite consequence was supposed to follow from the mistaken opinion that the degrees were measured by the angles MoM mOm' formed by lines drawn from the centre of the ellipse, but this hypothesis was contrary to the operations by which degrees are measured, for the lines OM and OM', Om and Om' not being perpendicular to the curve, are very different from those verticals to which the celestial arc is referred. This error was but of short continuance, nor has it ever since been revived, except by persons quite incompetent to form any opinion on the subject.

40. The Academy of Sciences employed themselves very assiduously in devising methods of verifying the hypothesis of Newton and Huygens. Two expeditions consisting of some of its most learned members were sent out, one in 1736, to Peru, the other in 1737 to the polar circle, to measure an arc of the meridian at each of these places; the one situate on the equator, the other as near the pole as was accessible. The result of these measurements did not exactly accord with each other and with the intermediate degree measured in France, yet was sufficient to put the question of the flattened figure of the earth beyond all doubt. The degree measured on the polar circle surpassed the equatorial degree 669 toises, and that measured in France, though less than the polar degree, surpassed that of Peru by 307 toises.

These differences, far too considerable to be attributed to error of observation, proved incontestibly that the earth was flattened at the pole, but to determine the difference of the two axes, it was necessary to be acquainted with the nature of the curve which forms the terrestrial meridian. The theoretical investigation of Newton and his successors shewed that this curve might be an ellipse, but in comparing this theory with different operations, a great discordance was found to subsist, and this was supposed to arise from a cause which in some measure strengthened the Newtonian theory of gravitation. And this was the irregular attraction of mountains. Bouquer first suspected that the plumb line of his sector was drawn from its true position towards the mountain Pechintcha in Peru. This effect of local attraction was afterwards confirmed by Dr. Maskelyne, who instituted some very exact experiments for this purpose, in the north of Great Britain. The length of the pendulum vibrating seconds was found to vary, regularly indicating a decrease of the force of gravity towards the equator, but the quantity of this variation did not exactly accord with the figure of the earth as deduced from the measurement of different degrees. Clairaut and succeeding mathematicians have explained in part this difficulty, by shewing that the above variations indicated an increase of density towards the center, in the matter composing our planet. They have shewn that if the figure of the earth be what is termed by mathematicians a figure of revolution, that is, a figure produced by the revolution of a curve about a fixed axis, in that case, for the fluids on its surface to be in a state of equilibrium, the generating curve should be an ellipse whose lesser axis should pass through the poles.

It was in France that the degree of the meridian was first determined with precision, and it was likewise in France that the operation was brought to an unexpected degree of perfection by the introduction of the repeating circle of Berda in a form adapted to terrestrial operations, instead of being made only for maritime observations for which it was originally intended. Delambre and Mechain were intrusted with the superintendence of this great trigonometrical operation, which was to determine the length of an arc of the meridian extending from Dunkirk to Barcelona. The principal object was to determine the length of the new *metre*, a standard measure equal to the ten millionth part of the terrestrial quadrant, and though this arc does not exceed the tenth part of the quadrant, yet by means of this instrument they were able to perceive the inequality of the degrees resulting from the spheroidical figure of the earth.

Many irregularities were observed in this measurement which are not very material in questions purely geographical.

A most laborious investigation of the whole process was undertaken by a committee appointed by the institute, assisted by several learned foreigners sent for the purpose by their respective governments, and their determination fixed the compression or ellipsity of the earth at $\frac{1}{334}$. This result is the more probable as it agrees with that obtained by the measures of the length of the pendulum in different climates, and with other results from considerations entirely astronomical. The equatorial regions being thus elevated above the rest are subject to an excess of attraction from the celestial bodies,

bodies, particularly the sun and moon; and it is from this cause that a motion of the axis of the earth takes place, producing the singular phenomenon known by the name of the "*precession of the equinoxes*," accompanied by a periodical irregularity called the nutation.

The degree measured by the academicians at the polar circle indicated a greater quantity for the ellipticity than any other measure, and this circumstance induced a suspicion that some considerable error might have been committed in the process. To remove this doubt M. Melander Hielm, a learned Swedish astronomer, undertook a new measurement of this degree; he employed the repeating circle, and made use of every precaution which the present refined state of the science could suggest. The French academicians only measured one degree. M. Melander included an arc of double that magnitude in his operation, by a first sketch of the calculation communicated to Delalande, the degree in latitude 66,20 appears to be 196 toises less than the former measurement of 1737 and the ellipticity $\frac{1}{1}$ which does not differ greatly from the determination given above.

The planet Jupiter offers a striking example of the effect of the centrifugal force in producing a spheroidical figure. The difference of the two diameters of this planet appears by exact measurement with a micrometer to be nearly $\frac{1}{10}$ of the whole, and if by analogy we compute the compression of the poles of the earth, by comparing the time of its rotation with that of Jupiter, we find the ellipticity or compression to be about $\frac{1}{3\frac{1}{2}7}$ or $\frac{1}{3\frac{1}{5}5}$ which is nearly the same as that found by other methods. Many other phenomena, the investigation of which is foreign to the plan of this treatise, indicate a similar compression; so that we may consider this compression as a fact no longer disputed, being verified both by experiment and analogy. See Mechanique Celeste, tom. II. & III.

41. The principal dimensions of the earth from the latest measurement are as follows:

The arc of the meridian between Dunkirk and Montjou contains 9° of the whole circle; its length is equal to 275,792 modules, the module being a rod of platina equal to 199,862 toises. The toise employed in this comparison was that which served for the measure of the degree in Peru, reduced to the length it should have at the mean temperature which prevailed during that operation, and the module taken at the mean temperature of the operation executed in France. The mean of the measured arc corresponded to latitude 46° 11′ 5″. Hence it was computed that

The quadrant of the terrestrial meridian is equal to 513,074 toises,

The whole circumference is equal to 2,052,296

which amounts to 7,193 leagues of 2853 toises each*.

These new measures determined with such great exactness, differ but seven leagues in the whole circumference from the measurement of Picard, from which we may judge of the very small degree of uncertainty that at present remains on this subject.

The *metre* or the ten millionth part of the quadrant appears from the preceding determinations to be equal to 513,074 toises, 443,296 lines.

With this standard as unity larger measures are taken by decuple progression, and smaller ones by decimal subdivision; a method extremely well adapted to geographical computations, as will be seen in the following pages.

The terrestrial radii not being equal to each other cannot be computed as in the circle; formulæ must be investigated to express the relation of the arcs of an ellipse with the axes of this curve, and it has been found that if the compression is taken at $\frac{1}{3\frac{1}{2}0}$ the same axis *E O* (fig. 18.) or the equatorial radius contains 3,273,279 toises, and the semi axis *O P*, or the polar radius is equal to 3,263,050, the difference being equal to 10,229.

Particular formulæ are likewise necessary for computing the value of the meridianal degrees for every latitude; these are obtained by finding the point of intersection of the perpendiculars or *Normals* with each other. These and all other requisite formula for calculating the positions of different points on the terrestrial spheroid may be found in a publication by Delambre, entitled "Methodes Analytiques pour la Determination d'un Arc du Méridien;" to which intelligent work the reader who wishes for further information is particularly referred. I shall only mention the value of the degree in 45°, as that is nearly the mean between that of the pole and that at the equator. It is 56,960 toises. This ellipticity of the earth, *viz.* $\frac{1}{3\frac{1}{3}}$, producing in the two diameters a difference of only seven leagues, would only give a difference of $1\frac{1}{2}$ line in a spheroid of three feet diameter; no attention need be given to this small quantity in the construction of our terrestrial globes, this difference being too inconsiderable to deserve notice relative to the whole spher. Because still less important in the details of geography, and may be entirely neglected in the construction of geographical charts, I shall therefore throughout this introduction, consider the earth a perfect sphere. The quadrant being divided into 90 equal parts, the mean degree will be 57,000 toises, and the marine league 2850 toises.

These observations apply still more forcibly to the smallness of the terrestrial mountains, compared to the diameter of the earth. The highest known mountain not exceeding 3000 toises in its perpendicular elevation, or a little more than a marine league, and the diameter of the earth containing 2292 of these, a mountain of this height would only have one line of elevation if represented on a globe of 30 feet diameter.

SECT. II. *Construction and use of different representations of the earth and different parts of the earth.*

43. The most accurate method of representing the surface of the earth is certainly by means of a terrestrial globe, and indeed it is the only one in which the relative

* If *a* represent the polar radius of the earth, and *b* the equatorial radius; then,

a = 3227126 toises. *b* = 3261432 toises.
= 6375737 metres. 6356649 metres.
= 20918230 English feet. 20855922 English feet.

T.

position

position and magnitude of different regions can be given in a simple form.

The most simple and exact method of constructing them is to delineate on the surface (according to directions hereafter to be given) the various countries intended to be represented.

Let two points be taken diametrically opposite to each other, to represent the poles, through these the axis of rotation must necessarily pass. With one of these points as a centre, and at an equal distance from each, let a circle be described which will represent the equator. Any great circle passing through the poles, may be taken as the first meridian, and of which each quadrant beginning from the equator must be divided into 90°. The equator likewise, reckoning from the meridian, must be divided into 360°. This being done, it will be extremely easy to assign the true position on the globe, of any place whose latitude and longitude are known. All that is requisite is to mark the latitude with a point on the first meridian, and through this point with the pole as a centre describe a circle which will be a parallel to the equator passing through the place, then a great circle is to be drawn through the poles and through the point of the equator corresponding to the longitude, and the intersection of these two circles will be the position of the place.

44. The latitude of a place being reckoned from the equator, its origin is determined by circumstances depending on the rotatory motion of the earth, but it is otherwise with the longitude of a place being reckoned from a meridian, and there being no decisive reason for preferring one meridian to another, geographers in their choice of this have differed much from each other.

Ptolemy, who has transmitted to us the most ancient geographical chart upon record, reckons from the meridian of the Fortunate or Canary Isles, from their being situated at the westward extremity of that portion of the world which was known in his time. And this portion extending farther in the east and west direction than from north to south, the first measure was called longitude or length, the other latitude or breadth, names still retained to this day.

That all longitudes might be reckoned in a uniform manner, Louis XIII. ordered that the first meridian should be placed on the island of Ferro, the most westward of the Canaries; and Delisle, who first introduced a considerable precision into our maps, fixed the longitude of Paris 20° to the eastward of this meridian. More recent observations have determined the difference of longitude between Paris and the principal town of the isle of Ferro to be 20° 5′ 50″, so that it became necessary to advance the first meridian 5′ 20″ to the east, hence it is now merely an arbitrary circle, not passing through any remarkable place on the earth.

The Dutch reckoned their first meridian from the peak of Teneriffe, a mountain situated in an island of that name, formerly supposed to be the highest in the world.

Geographers reckon their longitudes eastward of the first meridian: they have made choice of continuing round the entire circle; thus a place one degree to the westward has evidently, according to this method, 359° of longitude.

These methods have undergone considerable alterations, especially by mariners, since astronomical observations have become generally adopted in the science of navigation, for since the time at which any celestial phenomenon happens, and from which the position of a place is calculated, is always given in the tables for the principal observatory of the country for which they are constructed, it has been found much more commodious to refer the difference of longitude to the exact point for which these tables are made. For this reason French mariners reckon their longitude from Paris, and the English from Greenwich. Moreover, when the longitude of a place is deduced from the difference of time which elapses between the passage of the same star over the meridian, or by the difference of time as reckoned at each place, the difference of longitude may be considered in two different ways; for in travelling towards the east, the computed time is greater than at the point of departure, and this may amount to 24 hours in making a circuit of the whole globe in an eastward direction: the contrary happens in travelling westward; it therefore becomes necessary, in announcing the difference of time, to state whether it arises from a change of situation towards the east or west. And it is the custom in making marine charts, to reckon the longitude from the nearest distance from the first meridian, so that the longitude shall never exceed the demi-circumference or 180°. The globe being thus divided into two hemispheres relatively to the first meridian, those places on the eastward half are said to have east longitude and those in the other west longitude.

45. Hence we see the necessity of being able to reduce the longitude referred to one meridian after the manner of geographers, to those reckoned from some other according to the method used by navigators.

For instance, in the case of longitudes reckoned geographically, by making the whole circuit of the globe in an eastward direction, if we wish to compare two meridians, the difference of longitude must be taken; and if the meridian from which the new longitudes are to be reckoned is west of the other, this difference is to be added to these longitudes, and on the contrary is to be subtracted, if situated to the eastward.

For example, the peak of Teneriffe being situated one degree to the eastward of the isle of Ferro, all the longitudes reckoned according to the Dutch manner from this mountain, being augmented one degree, will give the longitudes reckoned from the isle of Ferro; it would be necessary on the other hand to subtract one degree from these latter longitudes to obtain the former.

But when they are reckoned from the same meridian, all the longitudes eastward as far as 180° are the same in both methods, but the longitudes westward must be subtracted from 360° to reduce them to geographical longitudes; and reciprocally, we may reduce a longitude which surpasses 180° to a west longitude, by subtracting it from 360°, as in the following example:

Carthagena in America, according to the tables, is situate in longitude 281° 57′ from meridian of Paris; taken from 360, the difference 78° 3′ is the longitude; this being 17′ beyond the opposite point, we have 179° 43′ for its longitude, east of the meridian of Paris.

46. The points which are first placed on the globe are those whose longitudes and latitudes have been accurately determined; they are usually the capital cities of different kingdoms, celebrated maritime ports, and the points which serve as boundaries to some of the most remarkable sinuosities of the ocean; the intermediate spaces are filled up from drawings geometrically constructed on a plane surface, or from the description of travellers; to this is added the boundaries of different states and the course of the principal rivers.

47. By means of a globe we may with great facility determine the distance of two places from each other, and measure the extent of different countries. The shortest distance of two points on a sphere is measured on an arc of a great circle passing through them, and as all great circles are equal, the degrees of any great circle are of equal value with those of the meridian; the arc required may be therefore easily measured by applying it by means of a pair of compasses either to the meridian or equator, which are usually graduated. If, for example, the arc contained between two places and referred to the meridian contains 29° 45′, the shortest distance between these points will be obtained by converting these degrees and minutes into nautical leagues of 20 to a degree; the 29° will equal 580 leagues, and each minute being equivalent to one third of a league or nautical mile, the 45′ will equal 15 leagues, and the total result will be 595 marine leagues.

For the preceding operation may be substituted a more exact calculation. For this purpose we must solve the spherical triangle APL (fig. 8.) formed by the meridians AP PL passing through the points A and L whose distance is required, and by the arc AL which joins them in this triangle; the sides AP, PL are known; for they are the co-latitudes or distances of A and L from the pole P, and the angle APL is their difference of longitude; by the rules of spherical trigonometry the arc AL will be found in degrees and minutes, which may be converted into linear measure as above. If A and L are situated in different hemispheres, one of the polar distances will be greater than 90 by the latitude of one, the points of Carthagena westward of Paris, as it is usually given in marine Charts.

The bay of Otallipiha, in the island of Otaheite, has been determined by navigators to be in longitude 151° 55′ 45″ west of the meridian of Paris; the geographical longitude is found as follows:

360 00 00
151 55 45

The difference 208 4 15 is the longitude required.

When longitudes are reckoned from two different meridians, and distinguished into east and west, it becomes necessary to notice on which side the meridian is situated to which the required longitudes are to be referred, then the difference of longitude of all the longitudes of the same denomination with this side are to be subtracted, and those of a contrary denomination added.

Example.—The meridian of the observatory of Paris being 2° 20′ east of that of Greenwich, all the longitudes eastward of Greenwich must be diminished to be reduced to the meridian of Paris, and those longitudes which are west must be augmented by that quantity. Thus the longitude of the Cape of Good Hope being 18° 23′ 15″ east of the meridian of Greenwich becomes 16° 3′ 15″ east of Paris. On the contrary the bay of Otallipiha, placed by English navigators 149° 35′ 45″ east of the meridian of Greenwich, becomes 151° 55′ 45″ when referred to that of Paris.

There is a case which sometimes gives rise to a little difficulty, that is, when the place to be reduced lies between the two meridians or their opposites, the place being thus east with respect to the one and west with respect to the other: for instance, in the first cases the difference of the meridians must not be subtracted from the longitude to be reduced, but the contrary which changes the denomination.

In the other case the number which results from the addition of the difference of longitude to the longitude reckoned from the meridian intended to be changed exceeding 180°, will be beyond the opposite meridian of the place to which it is referred, it must therefore be taken from 360, and consequently its denomination changed.

Example. Dover being 1. 18. 30. east of Greenwich, this subtraction must be made:

2° 20′
1° 18′ 30″

The difference 1° 1′ 30″ is the longitude of Dover west of the meridian of Paris.

Turtle Island, in the Pacific ocean, is placed by the English in 177° 57′ west longitude; this, added to 2° 20′ equals 180° 17′.

When the places whose distance is required are situated on the same meridian, nothing more is requisite than to convert their difference of latitude into linear measure. The latitude of a place is found on a globe by measuring the shortest distance of the place from the equator, or from a known parallel of latitude, and referring it to the graduated meridian, the number of degrees intercepted on this arc is that which must be added or subtracted from the latitude of this parallel, to obtain the latitude of the place proposed.

48. But the difference of longitude of two points situated on the same parallel are by no means the measure of their distance, except when they are on the equator itself; for these parallels being lesser circles, whose radii diminish as they approach the poles, their degrees have not the same value as those of a great circle. And a remark which is sometimes omitted should be made, that the absolute length of these arcs is not the shortest distance between their extreme points, through which a great circle must always be conceived to pass; for the radius of the parallel being shorter than that of the great circle, its arc is more convex, and its curvature greater than that of a great circle passing through its extremities, and consequently it is longer.

In following constantly the same *alinement*, it is impossible to describe any other than a great circle of a sphere, because the shortest line in this case is taken from one point to another.

Notwithstanding the degrees are different on different parallels, yet the absolute length of the degree on any given parallel is easily concluded from the known value of the meridional degree; for the degrees of these circles

circles are proportional to their radii, and the radii of the equator and its parallels are perpendiculars let fall from the different points of the meridian upon the diameter of the circle as represented in (fig. 8.) by the lines *EC*, *HK*; therefore, if the radius *EC* be taken as the measure of a degree on the equator, and it be divided into twenty parts, or marine leagues, the number of parts which the radius *HK* contains will be the value of the degree of the parallel *LM*.

Hence it follows, that to determine the length of the degree for each parallel, it will be sufficient to describe a quarter of a circle round upon a line *EC*, taken to represent the equatorial degree, to divide this quadrant into degrees, and to draw perpendiculars from each point of division to the radius *CP*, these lines will be respective lengths of the degrees at the points to which they correspond, or to every degree of latitude.

The line *HK* being the sine of the arc *PH*, and the cosine of the arc *EH*, of which one measures the distance of the parallel *HM* from the pole, and the other the latitude of the parallel, it is evident that, taking for unity the degree at the equator, the degree of any parallel whatever will be the cosine of the latitude as given by the trigonometrical tables.

The latitude of Paris being 48° 50′ and the cosine of this angle 0.684 of the radius, the degree of longitude is found by multiplying this number by 20 marine leagues, which will give 13.16 leagues, which is space that must be taken on this parallel, to produce a change of one degree of longitude. At 60° of latitude the degree of longitude is only 10 leagues, because the cosine of 60° is equal to the radius.

49. The meridian being a great circle, it will be described on the earth by following the direction of a meridian line traced in any place whatever, and every 20 leagues described on this line will produce a change of one degree of latitude; but a parallel to the equator will not be described by following a direction perpendicular to the meridian on the east and west line; for this alinement would determine a plane perpendicular to the meridian, and which continually deviates from the parallel as it recedes from their common origin: this is shewn in fig. 19, where *PEP* represents a meridian, *EGI* the equator, *HLK* a parallel, and *HIK* the great circle perpendicular to the meridian at *H*. It may be observed likewise, that all the great circles perpendicular to the same meridian meet in two opposite points *I*, *I*, which are the poles of this meridian; these great circles, therefore, continually approach to each other, and it is only in a very small space on each side the meridian *PEP*, that these circles *IEI*, *IHI* can be considered as parallel, and for the same reason it is only in a very small space that the east and west lines, or perpendiculars to the meridian, can be considered as parallel to each other.

The great circle *IHK*, perpendicular to the meridian *PEP*, cuts the other meridian *P′LP* in angles which are different for each; but the parallel *HLQ* cuts them all at right angles. Hence, in proceeding from the point *H* to the point *L* on the parallel, it is necessary to deflect at every instant from the first direction, to keep at right angles to the different meridians which are successively passed over, and which all tend to the pole *P*. It is only, therefore, by the assistance of a compass, or by some similar but more exact method of determining the position of the meridian, that we can, by continually advancing in a direction due east or west, maintain always the same distance from the equator, and proceed upon the same parallel.

And in general when, by means of a compass, we follow a direction which cuts all the meridians at the same angle, that is, when we keep on the same rumb, the alinement is changed at every point, to preserve a constant angle with the new meridian which converges with the preceding; hence a sort of spiral line is described, called a loxodrome, and of which a more particular account will be given in the method of constructing charts for the purposes of navigation.

50. To measure commodiously the extent of any region traced upon the globe, we may conceive its surface divided into quadrilateral figures by meridians, and their parallels drawn either to every 10° or 5°, that is, generally into portions sufficiently small that any irregular space may be compared without difficulty with the quadrilateral figure which contains it. The superficial extent of each quadrilateral, contained by two meridians and two parallels, is found by first determining that of the entire zone contained by the two parallels, and this will be to the area of the whole sphere as the distance of the parallels which terminate it is to the diameter; which distance corresponds on the diameter to the difference of the sines of the latitudes of each parallel, as appears in fig. 8, where the line *CK* represents the difference between *CP* and *KP*.

For example. For the zone contained by the parallels 48° and 49°, and in which Paris and its environs is situated.

The sine of 49°	=	0,755
48	=	0,743
Difference		0,012

its half, 0,006, indicates that this zone contains $\frac{6}{1000}$ or $\frac{1}{333}$ of the total surface of the globe, and this being estimated at 16,501,200 square leagues, the above zone may be estimated at 99,007 square leagues.

As to the magnitude of this zone contained between two given meridians, it evidently bears the same proportion to the whole quantity as the difference of longitude to the whole circumference; the extent, therefore, of a quadrilateral contained by one degree in the longitude of Paris, is the 360th part of 99,007, or about 275 square leagues.

A similar calculation being made for a quadrilateral containing one degree of longitude for every degree of latitude from the equator to the pole, will give a table of results, by means of which the extent of any region may easily be computed, either on a globe or map.

51. To place a globe conveniently, and that it may serve for many useful purposes, its axis is usually fixed in a diameter to a graduated circle of brass, and which represents the plane of any celestial meridian whatever: this circle passes through another fixed to the support

of the globe, called the horizon, because the axis of the globe admitting of every possible inclination with respect to this circle, it may be thus made to represent universally the horizon of any given place. The poles may thus be set at any elevation above the horizon, and the globe turned on its axis independently of the meridian, which always remains fixed; the axis of the globe carries an index, which is adapted to a dial divided into 24 parts or hours, and to the whole is sometimes added a compass, to place it in the direction of the meridian.

To facilitate the measuring of the distance of one point from another, a thin moveable arc is added, called a quadrant of altitude, and which may easily be applied in any direction, and being the arc of a great circle, it measures, on its graduated limb, the shortest distance between any two points to which it is applied. When the upper point is fixed in the zenith, the lower coincides with the horizon, and it then marks the distance from the horizon of every point through which it passes, or the altitude of any star that may be at the time vertical to that point.

52. The following are the most useful problems that may be solved by these instruments:

1. The latitude of any place is found by bringing it under the brazen meridian, whose graduated edge will indicate the distance from the equator.

2. The longitude of a place is found by observing the point on the equator intersected by the meridian which passes through it.

3. And reciprocally the position of a place is found, when its latitude and longitude is given by bringing the point of the equator corresponding to the longitude under the meridian, where the given latitude will indicate the required place.

4. The hour reckoned in one place, at the moment of noon at any other, is found by bringing the latter under the meridian, and placing the index of the dial at 12; then turning the globe till the other place is brought under the meridian, the index of the dial will mark the time required: the time will be *afternoon*, if the globe be turned towards the east; and before noon, if turned towards the west.

53. The length of the longest day for every place in either hemisphere (for instance the northern) is found by elevating the meridian in such a manner that the arctic circle may just become a tangent to the horizon, the horizon will then represent the circle of illumination; then, if the place required be brought to the meridian, and the hour index placed at 12, the globe being turned round till the place comes to the horizon, the index will mark the time at which the point passes from the enlightened into the obscure hemisphere, or the time of sunset: the number of hours will be half the length of the day required.

By placing the pole nearer to the horizon, this circle takes the position of the circle of illumination: for periods preceding the solstices, and the length of the days for their respective periods, will be indicated as before.

It may be farther remarked, that, in this position of the globe, all the points which are situated at the same time on the westward part of the horizon are those which, passing at once from the obscure into the enlightened hemisphere, see the sun rise at the same instant of time, and it passes the meridian to all those places situated on the meridian. The cardinal points, with their subdivisions, are usually placed on globes, and the position of any place with respect to the sun at the moment of its rising or setting, by observing at what point of the horizon the place proposed passes from the obscure to the enlightened hemisphere, and *vice versâ*: the opposite indications will shew the situation of the sun relative to the meridian of the place proposed.

This is not, however, the most usual way of solving these problems on the globe; it is most usual to represent each particular case separately; but this method seems to me preferable, because it is more general, and because it offers a physical representation of what has been said (No. 15). It will be sufficient to place a globe in obscurity, and to illuminate one hemisphere by a strong light placed at a considerable distance, and the phenomena will be rendered apparent which the sun produces during a revolution of the earth relatively to the different positions which its axis takes with respect to the sun.

And generally, the declination of a star being known, if the pole of the same denomination be elevated above the horizon by a quantity equal to that declination, this circle will then divide the heavens into two parts, to one of which the star is visible, while invisible to the other. The above method, therefore, may be employed to determine the places to which a star given in position is visible at any given instant.

54. The distance between any two points on the globe is measured by bringing one of them to the meridian, and placing the center on which the quadrant of altitude turns directly over it; then turning the quadrant of altitude round till it passes through the other point, and the degrees intercepted on the arc will be the distance required.

If the direction or azimuth which one point makes with the other be required, one of them must be brought into the zenith or pole of the horizon; that is, the globe must be rectified for that point, or the pole elevated to the latitude of the place, the horizon of the globe will then represent the horizon of the place: this being done, and the quadrant of altitude adjusted in the manner above described, the number of degrees intercepted on the horizon by the quadrant of altitude, and the north or south point of the horizon, is the azimuth required, which is the angle which a great circle passing through the given points makes with the meridian.

55. The problem (53) might be solved for any particular place, by substituting the rational horizon for the circle of illumination. For this purpose the globe must be rectified for the latitude of the place, which must be brought to the meridian, and the hour index set to 12.; then the point must be marked which is directly under the degree of the meridian corresponding to the declination of the sun; this point is then to be brought to the horizon, and the number of hours marked on the dial will shew the time between noon and sunset; for it is evident that a point at a certain distance from the

the equator will describe a circle which will represent the sun's path at the time it has a similar declination.

And by the same method may be found the time which elapses between the rising of any star and its meridian passage, by comparing it with a point whose distance from the equator is equal to the declination of the ſtar.

56. The difficulty of executing globes large enough to shew the details of geography, and the embarrassment occasioned by their use, have taught the necessity of representing on a plane surface the respective situation of different objects on the globe of the earth.

Curved surfaces, as compared to plane, are divided into two classes; some, like those of cones and cylinders, being capable of extension on a plane, without rent or fold, whence they are called developable surfaces; while others, like those of a sphere and spheroids, are quite incapable of this extension. If the earth had been comprised in the first class, a simple developement, of easy execution, would have presented maps, in which the distances of the places, and the respective extent of the countries, would have been preserved, such as they are in nature; but unhappily the earth is a spheroid, and its surface can never exactly coincide with a plane: whence arises the impossibility of preserving at the same time, on a map, the natural relations between the extent of the countries, the distances of places, and the strict resemblance of configuration. We are therefore obliged to have recourse to different constructions, in order to represent, at least in an approximate manner, each of these relations.

These constructions have been called *projections;* a name applied in general to drawings, of which the object is to represent, on a plane surface, the dimensions of space and bodies. They are of two sorts, some being perspective representations of the globe, or parts of its surface taken from different points of view, and upon different planes considered as pictures; while the others are only kinds of developements, subject to the laws of approximation, and confined to the relations which are intended to be preserved. To this latter kind belong the large map of France, and the sea charts in daily use.

Lambert, and after him Euler and Lagrange, have reduced the theory of these two kinds of projections to the general principle of the transformation of circular co-ordinates *, assumed from the sphere, namely, meridians and parallels, into other straight or curved lines traced on a plane, and depending upon conditions relative to the desired qualities of the map.

57. The choice of the point of view, and of the plane of the picture, being made the projection, may be constructed for each particular object, according to the rules of common perspective, here reduced to determine on the picture the point from which the visual ray shall reach the object; but the number of operations which must be made, if each point of the country meant to be represented were considered separately, being too considerable, it is thought sufficient to construct the lines which are the perspectives of the meridians and parallels, and which, by their junctions, determine all the geographical positions.

Setting aside the oblate form of our globe, and considering it as a spherical, it may be perceived that the whole of the visual rays, extended to all the points of any circle formed on the globe, constitute a cone, of which the section, in the plane of the picture, can only be one of the curves of the second degree, and even in some cases a straight line. It would appear that the first decisions, in the choice of the point of view, were dictated by the consideration of the consequent facility in the construction of the map; and that, from the time of Ptolemy, it had been observed that in making the plane or picture pass by the centre of the sphere, and placing the point of view at the extremity of the radius, drawn perpendicularly on that plane, all these circles of the globe were represented by other circles, of which the construction was easy, and which intersected each other in the map, under the same angles as upon the sphere, so that the spherical rectangular quadrilaterals, comprehended between the meridians and the parallels, were represented by curvilinear quadrilaterals, also rectangular †. It has since been proved that the infinitely small portions of the globe assume in this projection their natural figure, but it must be observed, that this similitude only takes place in very small spaces. Such are the conventions which have given rise to the *stereographic projection*, and such are its principal properties ‡.

It is more commonly employed to represent an entire hemisphere; and when two are joined they constitute a map of the world. When those are chosen which are circumscribed by the first meridian, the picture is in this case the plane of the meridian, and the eye is placed in the pole of that circle. It is sufficient to see a map of this kind to comprehend that the quadrilaterals, comprised between two consecutive meridians and parallels, augment in extent in proceeding from the centre to the circumference, and that in a very considerable degree. It is perceived, besides, that this enlargement results from the obliquity of the visual rays, when they depart from that which is perpendicular to the picture, and which may be called the optical axis. Hence it follows that the parts towards the borders of the hemisphere have a far more considerable extent than those towards the centre; and that mistakes will arise if they be referred to the latter §.

Maps of the world have the further inconvenience of separating the adjacent parts of the globe, and of only offering in an exact manner the respective situation and the configuration of the countries towards the middle of the map. This defect is remedied in *Polar* and *Horizontal Projections;* the first, representing the hemispheres separated by the equator, display with sufficient exactness the regions around the poles; while the second present the hemispheres above and below the horizon of the

* Things arranged and dependent on the ſame order.

† Ptolomæi Planisphærium, etc. Aldus Venetiis, 1553.

‡ The word is derived from the Greek, meaning the art of drawing the form of solids on a plane.

§ Some geographers begin with the corners, and work towards the centre.

place

place to which they refer, and are the most proper for the knowledge of the surrounding regions, or their antipodes, whence they merit particular attention.

58. I shall therefore give the demonstration of the fundamental properties of these projections, whence I shall deduce the process of their construction. The eye being supposed at *O*, fig. 20, the plane *A D B E*, drawn through the centre *C* of the sphere, perpendicular to the radius *O C*, is the plane of projection. Any circle *G I H*, traced upon the surface of the sphere, determines the cone *O G I H*, of which the intersection *g i h*, with the plane *A D B E*, is the projection of the proposed circle. Now the plane *A F B O*, drawn by the line *O F*, and by the centre *K* of the circle *G I H*, cutting at right angles the planes *G I H* and *A D B E*, presents the means of knowing the angles which these planes make with the sides of the cone *O G* and *O H*; and it will be seen that the angle *O G H*, of which the summit is at the circumference, having for measure the half of the arc *O B H*, is equal to the angle *O h g*, which, being placed between the centre and the circumference, has for its measure the half of the sum of the arcs *H B* and *A O*; besides, the angle *O* being common to the two triangles *O G H* and *O g h*, it follows that the angles *O H G*, *O g h* are equal, whence the cone *O G I H* is cut in an antiparallel direction by the plane *A D B E*, whence the section *g i h* is a circle.

This last, which is the projection of the circle *G I H*, will be determined when we know its size, and the position of its diameter, and to obtain them it is sufficient to construct in the plane *A O B F* the triangle *G O H*, in accord with which the plane meets the cone *O G I H*, the line *A B*, which then represents the plane of projection, intersecting the triangle *O G H*, in the diameter *g h* of the projection required.

59. This being established, in order to construct a map of the world on the plane of the first meridian, the point of view being placed in the centre of the hemisphere, opposite to that which is to be represented, will be at the intersection of the equator and meridian, which divides this last hemisphere into two equal parts. First is considered the section of the globe made by the plane of the equator *A D B E*, fig. 21. The line *A B*, the common section of that plane and of the picture on the projection, represents the equator; the points *M* and *N* mark two points of the division made on this circle by the meridians; the eye is then at *D*, and the visual rays *M D* and *N D*, drawn to the points of division *M* and *N*, give upon *A B*, at *m* and *n*, the perspectives or projections of these points; the three equal arcs *A M*, *M N*, *N E* are then represented by the parts *A m*, *m n*, *n C*, visibly unequal.

In drawing through the point *M'* diametrically opposite to the point *M*, a visual ray *M' D*, we shall finish the angle *M D M'*, formed by the two opposite sides of the cone, passing by the circumference which comprehends the meridian drawn to the point *M*, and its opposite, and prolonging the straight lines *A B* and *M' D* till they meet at *m'*, the interval *m m'* will be the diameter of the projection of the meridian passing through the point *M*.

If it be now conceived that the circle *A D B E* turns around the diameter *A B*, it may be brought on the plane of the first meridian. The line *D E* will then become the axis, the points *E* and *D* will be the poles, and the lines *M D*, *M' D*, not having changed their situation with regard to *A B*, if there be described on *m m'*, as diameter, an arc of a circle *E m D*, it will be the projection of a meridian distant from the former by an arc equal to *A M*.

To construct the projections of the parallels to the equator, we must consider the section of the globe made by the plane of the meridian passing through the sight, and perpendicular to the first meridian. We may still use fig. 21, and conceive that the plane of the first meridian *A D B E* has turned around the axis of the poles *D E*, to assume a situation perpendicular to its first. The point *B* will then be the spot occupied by the eye, the axis *E D* will be the projection of the middle meridian, the points *M*, *N*, taken on this meridian, will belong to the parallels, whose latitudes are *A M*, *A N*; in fine, the visual rays *B M*, *B N*, will give at *r* and *s* the projections of the points *M* and *N*.

In assuming the arc *E N'* equal to *E N*, is determined on the parallel a point *N'*, diametrically opposite to the point *N*; and prolonging the visual ray *B N'*, and the line *D E* till they meet at *s'*, the interval *s s'* will be the diameter of the projection of this parallel. If, therefore, the circle *A D B E* be brought to the position of the first meridian in this motion around the line *D E*, the right lines *B N*, *B N'*, will not change their respective situations; and there may be described on *s s'*, as a diameter, the arc *N s N'*, which will be the projection of the parallel passing at the latitude *A N*.

60. All this construction, which may be effected on one figure, is only intended to find the graduation of the diameter *A B*, which represents the equator, and that of the axis *E D*, which is also the meridian of the middle of the map; for the points *m* and *n*, combined with the poles, give three points of each meridian, and there are also three for the parallels in combining the two extremities *N* and *N'* with the point *s* determined on the diameter *D E*.

The lines *C n*, *C m* are easily calculated in the rectilinear triangles *D C n*, *D C m*, rectangular at *C*, whence we know the common side *C D*, and the angles *C D n*, and *C D m*, measured by the halves of the arcs *N E* and *M E*, which are the complements of the longitude of the meridians.

The triangles *B C r*, and *B C s*, give in like manner the distances *C r* and *C s*, which form the graduation of the meridian in the middle of the map.

61. The construction of the *polar projection* consists in the determination of the degrees of the meridian, and fig. 22. indicates the operation. The circle *A D B E* represents a meridian upon which the eye is at *D* at one of the poles, and whose projection is the diameter *A B*: the arcs *A M*, *M N*, *N E*, are projected upon that line in *A m*, *m n*, *n C*, by the visual rays *D M*, *D N*. It may be then conceived that the plane *A D B E*, turning around *A B*, may apply itself on the equator; and from the centre *C*, with the radii *C n*, *C m*, circles are described, which are the projections of the parallels to the equator, passing by latitudes equal to the arcs *A N* and *A M*. As to the meridians, as their planes intersect each other according to the axis of the poles, which each

is at the same time the optical axis, their projections are the radii CM, CN, corresponding with the longitudes AM, AN.

62. In the *horizontal projection*, the circle $ADBE$, fig. 23, indicates the meridian of the place proposed, which divides its horizon into two equal parts. The eye being always at D, the visual rays DP, DN, DN', drawn to the superior pole P, and to the extremities N and N' of whatever parallel, mark upon AB, which is the projection of the semicircle AEB, the projection p of the pole, and the diameter nn' of the parallel. The equator is obtained in the same manner, FF' denoting its diameter, while ff' is that of its projection. This projection, and that of the parallel, may be traced in conceiving that the circle $ADBE$ is turned around the diameter AB, to fall on the horizon; the equator being the arc EfD, and the parallel being the circle nn'.

To determine the projections of the meridians, first is sought that of the inferior pole P', which the visual ray DP being prolonged, gives at p'. Conceiving then the circle $ADBE$ to be applied anew on the horizon, there is described on the diameter pp' a circle which represents the projection of the meridian perpendicular to that of the place. As they must all pass through the points p, p', the projections of the meridians will have their centres in the line de perpendicular upon the middle of pp'; and to finish their determination, it is sufficient to find a third point, which may be done in many ways. That which I am about to give rests upon a construction which agrees with all similar determinations, and which consists in referring or projecting the different points of the equator upon the horizon, by right lines perpendicular to the plane of the latter.

For this purpose, I assume an arc BL, equal to the longitude of the proposed point of the equator, and lay down GL perpendicular to DE, then bring GL to CF from C to L'', and drawing $L''L'$ parallel to DE, the point L' of the intersection of the lines $L'L''$ and GL is the projection required, or the foot of the perpendicular let down from the point of the equator, of which the longitude is equal to BL on the horizontal plane *.

This being done, if we observe that the plane, passing through the sight and the proposed point of the equator, being drawn by the line CD, perpendicular to the plane of the horizon, necessarily contains the perpendicular let down from that point at L', it will be seen that its intersection with the horizontal plane is the line CL' drawn by the centre of the horizon. This right line will determine at l on the arc of the circle EfD, which is the stereographic projection of the equator, the projection of the point proposed. In repeating this construction, that of the equator may be easily graduated, conformably to the laws of the projection.

It will also be remarked, that the line CO is the projection of the circle of altitudes (sect. 51.) drawn through the spot which occupies the centre of the map, and by the proposed point of the equator, since the planes of the circles of altitude passing by the line DE necessarily have for projections, lines drawn by the centre C of the map.

63. The inequality of the spaces of the graduation of the stereographic projection does not, in general, permit the application of a rectilinear scale to compare the respective distances of places, distances which are measured according to an arc of the great circle which joins these places two and two; but we may always, by means of the graduation itself, measure the distance between the centre of the map and any one of its points; and we may, in consequence, find upon a horizontal projection, referred to Paris, for example, the distance from this city to all the other points of the globe. This property is the consequence of a projection in which all the great circles which pass by the centre of the map, intersecting each other according to the optical axis, have for their perspectives right lines drawn by that centre, and admit a graduation similar to that which is marked upon the equator of maps of the world constructed on the plane of the meridian.

In placing the point of view at the centre of the sphere, and assuming for the picture a plane tangent to its surface, there is obtained a perspective of the globe, in which all the great circles are represented by right lines. It alters like the preceding, and still, in a greater degree, the extent of the countries in proportion as they are distant from the centre of the map; nor can it even represent an entire hemisphere, because the visual rays, drawn by the circumference which terminates this hemisphere, are parallel to the plane of the picture; but it may be very useful for portions of small extent, and admits a kind of scale of which the construction is not difficult. It is doubtless for this reason that Prony proposed its use in surveying lands. This projection is further remarkable, as it is employed in making sun dials.

It will not be difficult to modify in this case the procedures which I have already given for the construction of meridional, polar, and horizontal projections. There must be drawn from the point C of the figure cited in these articles, the visual rays which determine the section made in the cones, perpendicularly to the circles which are to be represented, and the plane must be assumed parallel to that which passes by the centre and is tangent to the circle $ADBE$. It will then be seen that, in the projection on the plane of the first meridian, the meridians will be straight lines, perpendicular to the equator, which will also be a right line; and the parallels to the equator will be hyperbolas. In the polar projection the meridians will be straight lines, drawn from the centre of the map, and the parallels to the equator circles having their centre at that point: in fine, in the horizontal projection the meridians will be right lines drawn through the projection of the superior pole. The parallel of the place to which the projection is referred will be represented by a parabola, those which are nearer the pole by ellipses, and the others on each side of the equator by hyperbolas.

* This process will be evident by its description alone to readers who have studied the geometry of planes and surfaces; they will perceive that the angle FCB is that which forms the plane of the equator with the horizon; and that in consequence we have, in order to construct the points of the first, its common section DE with the second, and the angle which they comprehend. See *Complement des Elemens de Geometrie*.

64. If we conceive the point of view carried to an infinite distance from the picture, the visual rays will become parallel among themselves; and supposing them then perpendicular to the plane, we shall have the *Orthographic Projection*, in which the meridians and parallels are in general represented by ellipses, excepting in the polar projection, where the meridians are right lines, and the parallels concentric circles. The whole of the visual rays, directed to the different points of the circle to be represented, then forms a cylinder, of which the axis is parallel to the line marked CO, fig. 20. To form an idea of this it is sufficient to inspect fig. 24, analogous to fig. 21; the visual rays Mm, Nn drawn by the different points of the circle $ADBE$, considered as the equator, will determine on its diameter, the graduation conformably to the laws of the projection. The space $m\ m'$ comprised between the two perpendiculars $M\,m$, $M'\,m'$, led from the two opposite points of the meridian, is the lesser axis of the ellipsis, which this circle has for its projection; and the great axis is the diameter of the sphere, or of the first meridian which remains circular. The parallels to the equator, having their planes perpendicular to that of the first meridian, are there represented by their diameters, as NN'. After the manner in which I have modified the design of the meridional projection, it is easy to find the changes which that of the two others must undergo.

A very simple sketch will instantly display the orthographic projection of any place on the plane of the meridian, and its distance perpendicular to that plane. Having drawn upon the plane of the first meridian $ADBE$, by the latitude AN of the place proposed, the diameter NN' of its parallel, the circle is described, and we take the arc NL equal to the longitude, then drop upon NN' the perpendicular Ll, the point l being the orthographic projection of the place, while Ll is its distance on the plane of the meridian. The same sketch executed for another point also giving its projection, it is easy to find the right line across the globe which immediately joins these two places.

The operation is simplified when projected on the plane of the equator. There is formed the angle ACB, fig. 25, equal to the difference of longitude of the places proposed; the arcs AM and BN are assumed as equal to their respective latitudes; the right lines Mm and Nn, perpendicular on AC and BC, give the projections m and n of these places, while mn is that of their distance. If then you raise on $m\,n$ the perpendiculars $m\,M''$ $n\,N''$, respectively equal to the right lines Mm, Nn, and draw $M''\,N''$, this right line will be the chord of the arc of the great circle comprised within the two places proposed; and in carrying it to the meridian divided into degrees, we shall obtain, as in section 47, the measure of the shortest road from the one point to the other.

If the point N was in the hemisphere opposite to the position of the point M, it must be constructed at N' beneath BC, its projection on the plane of the meridian being still n; but we must carry the perpendicular $N'\,n$ beneath the right line $m\,n$, and the shortest rectilinear distance from the two proposed points will then be $M''\,N'''$.

65. The orthographic projection has, with regard to spaces, the contrary defect from the preceding, as it diminishes them from the centre to the circumference, on account of the obliquity under which the lateral parts of the sphere are presented to its diametral plan. La Hire thence concluded, that in prolonging the optical axis out of the sphere, the plane or picture still passing by the centre, there existed on that axis a point where the inequality of spaces was the smallest possible; for it is evident, that when the point of view is at such a distance, that the obliquity of the rays which tends to enlarge the spaces, becoming smaller, may be compensated by that of the projected surfaces which tends to diminish them, and their increase must be changed into decrease. There cannot be absolute equality in all, because the law of their variation depends on their particular situation; but at the limit which we have assigned, their differences are sufficiently small to be neglected in a general map.

La Hire * has assumed the point of view of his projection, at the distance from the sphere equal to the sine of forty-five degrees. Fig. 26. shews how the graduation of the equator is obtained, when the projection is made on the plane of the meridian, placing the eye at the point d, such as $Dd = FG$, the arc BG being the half of BE, whence Cg is the half of BC. It might also be required to place on the line DE the point d, so that the degrees of the equator contiguous to the point C, or to the meridian of the middle of the map, and to the point A, or to the first meridian, should occupy the same space on the diameter AB; which is easily accomplished by means of the trigonometrical formulæ, which express the size of any space $m\,n$.

I do not know if maps have been constructed on this projection, and I am surprised that it should not become common, for it appears to me preferable to the common projection of maps of the world. It will be in vain objected, that the meridians and the parallels being therein represented by ellipses, it must be more difficult to trace, for it is evident that the method of the projection must always be for a skilful geographer the smallest of the difficulties presented in the execution of a map. There are numerous simple and convenient methods of drawing ellipses through points; and we are often obliged to employ them for the circular meridians and parallels, placed towards the centre of maps of the world on the stereographic projection, because their radius is too great to be described with compasses. The horizontal projection performed after the principles of La Hire, would be capable of giving distances as well as the stereographic. In fine, I cannot see that any property of the stereographic projection can recompence in planispheres the inconveniences of the disproportion thence arising between equal spaces; and the error into which a disciple would be led who wished to compare, for example, India with Novaya Zemlia, or the Red Sea with Hudson's Bay.

66. The stereographic projection is little used in par-

* Mem. de l'Acad. des Sciences, 1701, p. 260.

ticular

ticular maps, and the Germans alone have introduced it, particularly Hasius, who composed the greater part of the maps in the Atlas of Homann, in much request towards the middle of the last century. The four parts of the world, separately represented in this projection, are only portions of a planisphere constructed on the like dimension, on the plane of a meridian perpendicular to that which passes through the middle of the map, the eye being placed in the plane of the latter. The excessive length of the radii of the circles renders them very difficult to observe; and the alteration of the spaces and distances is not less than in other projections of more easy execution; whence these maps are little known in France.

The inequality of the spaces may, however, be diminished, as in the planisphere, by placing the point of view out of the globe; but the distance to which it must be carried, depending on the extent of country contained in the map, will diminish in proportion as this extent becomes smaller, and may be easily calculated by comparing the degree on the margins of the map with that which is in the middle.

It will be easy to persons familiar with geometry and trigonometry, to deduce from section 59 and section 62 the procedures of the calculation in order to construct these maps, and to draw the arcs of the circles which they must contain by points, in referring them to their chords or to their tangents; but these details would here pass the bounds which I have prescribed to this discourse.

67. The most simple of the projections by developement, is what is called the *Conical Projection;* it being, in fact, natural to compare a spherical zone to a truncated cone, and thence to construct its developement. The parallels become circles, described from a summit of the cone taken as a centre; and the meridians are right lines subjected to pass through that point. It is visible that the result will approach the nearer, in proportion as the map shall embrace less extent in latitude. This projection may vary in different ways; for it may be supposed that the cone is a tangent to the middle parallel of the map, and, in consequence, exterior; or that it may be in part inscribed in the sphere, that is to say, formed by the secants of the meridians. In the first case, the map will not be perfectly exact, except on the middle parallel, which will preserve in its developement the length which it really possesses on the sphere; but the parallels placed above and beneath will exceed those which on the sphere are correspondent. Murdoch, an English geometrician, has proposed to substitute to the tangent cone, a cone partly inscribed, and determined by this condition, *that the part of its area comprehended in the map, should be equivalent to that of the spherical zone which it represents.*

The whole construction of this kind of map rests on the determination of the summit of the cone, and on the amplitude which the circle serving as its base must assume in its developement.

When the cone is tangent to a point E of the meridian AP, fig. 27, its sides will be obtained in prolonging the tangent of that point till it shall meet the axis CP, also prolonged; the line ER, being then the side of the cone, and its basis the circle, having Ee for its radius. The developement is effected by known means, for which the *Complement des Elemens de Geometrie* may be consulted.

To form the degrees of longitude, we must take the three hundred and sixtieth part of the arc, described from the summit R as the centre, with a radius RE, and which represents the developement of the parallel passing by the point E, then drawing right lines through the divisions of that arc and the summit of the cone, we shall have the meridians, which corresponding with an arc of a greater radius than that of the parallel, will intercept an angle smaller than a degree. In order to procure the degrees of latitude, we must bear upon one of these meridians, beginning at the point E, as well above as beneath, parts equal to the developement of the arcs of the terrestrial meridian. In fine, we describe from the point P, and, by the divisions of the meridian, concentric circles which will represent the parallels.

When the cone ought to be partly inscribed, there is drawn by the points A and F, in which it must intersect the meridian, a secant AF, of which the junction R', with the axis CP, gives the point of concourse of the right lines which represent the meridians, or the summit of the cone; the right lines AR' being its side, and Aa the radius of its base. The space AF, being that which corresponds with the arc AEF, ought to be divided like that arc. By this construction we take the chord AF for the arc AEF, and the degree of latitude is a little too small, when referred to the degree of longitude on the parallels of the points A and F; but the difference is a trifle when the arc of the meridian has little extent. Nevertheless, a perfect equality may be established between the degrees of latitude on the map, and those of the meridian of the sphere, by assuming, instead of AF, the developement of the arc AEF, this circumstance, augmenting the distance of the radii Aa and Ff of the parallels, somewhat prolongs the point of concurrence of the lines AR' and CP.

The point R' is obtained in general by reference to similar triangles:

$R'Aa$, $R'Ff$, which give

$Aa : Ff :: AR' : FR'$

$AaFf : Aa :: AR' : FR'$ or $AF : AR'$.

When we wish to have regard to the difference between the arc and its chord, we substitute to the line AF the developed length of the arc AEF.

68. The astronomer, Dellile (de la Croyère), who was charged with the construction of a general map of the Russian empire, wishing to avoid the inconveniences of the stereographic projection above-mentioned, chose the conical projection: but in order to perfect it, he thought of making the cone enter into the sphere in such a way that it should intersect it according to two parallels, each placed at an equal distance from the middle parallel, and from one of the extreme parallels. The map had, by this mean, on the two parallels just mentioned, the same dimensions as the correspondent part of the sphere; and its total extent differed little from the country to be represented, because the excess at the two extremities of the map was at least compensated in part by the deficiency of the inscribed portion of the cone, with respect to the spherical zone. The map comprising from the fortieth degree of latitude to

the seventieth, the middle parallel answered to 55°; and the parallels common with the spheres were those of 47° 30′, and 62° 30′.

Euler occupied himself with this projection, but he substituted to the determination of the parallels, which must be common with the sphere, that of the point of concourse of right lines which represent the meridians, and of the angle which they make among themselves in the comprehended degree of longitude. His calculations are supported on the following grounds. 1. That the errors are equal on the southern and northern extremities of the map. 2. That they are also equal to the greatest of those which happen towards the middle parallel. He thence concludes that the point of concourse of the meridian ought to be placed beyond the pole by a quantity equal to five degrees of latitude, and that the angle of two consecutive meridians ought to be of 48° 44′ *.

He then enquires how much the arcs of the great circles which measure the distances on the globe differ from the right lines which are substituted to them on the map; and he finds that an arc of 90° will have on the map a length of 90°.79, of the exactness of less than a hundredth part of its extent.

69. There may be substituted to the conical projection made on the two parallels of the globe, a map which may coincide with three, by describing the extreme parallels and the middle parallels either as right lines, or as concentric circles of a given radius, then by dividing these parallels according to the law of the decrease of degrees of longitude, we shall procure three points for each meridian, which will be represented by the circle drawn through these three points. I shall not dwell on this projection, indicated, I believe, by Bion, in his book on the Use of the Globe; and which, like that of Ptolemy, is only the conical projection disfigured.

70. Some geographers have also entertained the idea of developing in a right line all the parallels, and one of the meridians, that passing through the middle of the map; thus the parallels, which are all perpendicular to this meridian, correspond in spaces with the globe; there are then assumed in each the degrees of longitude according to the law of their decrease, that is to say, proportioned to the co-sines of the latitude; in fine, there passes through each series of the corresponding points of the division a curve line, which represents the meridian. From this construction, of which fig. 28. offers an example, it follows that, in respect to its parallels, the map presents throughout dimensions equal to those of the sphere; but the configuration is considerably altered on the sides by the obliquity of the meridians, so that the spherical rectangular quadrilaterals, comprised between the meridians and the parallels, are represented by mixtilinear trapeziums, of which the angles are very unequal, but the areas are in truth equal. This projection has been employed in the Atlas Celestis of Flamstead; in the four parts of the world by J. B. Nolin; and by several other geographers.

71. Easy to trace, and preserving the relations of superficial extent among the different countries, this projection must have interested geographers; and an easy mean was soon discovered of correcting the defect occasioned by the obliquity of the meridians, by substituting to the right lines representing the parallels, concentric circles described from a point taken in the axis of the map, and passing by the divisions of that meridian, the position of their common centre is fixed according to the curve which it is proper to give them, that they may intersect all the other meridians with as little obliquity as possible. This projection, represented at fig. 29, is the most used in France in general maps, such as those of the four parts of the world; and among others, Delille and D'Anville have employed it. The quadrilaterals, comprised between the parallels and meridians of this projection, are, as in the preceding, equivalent to those on the sphere. In both these, distances cannot be exactly measured, except on the meridians and parallels: and the scales of such maps only present approximations, which are, however, sufficient for the common purposes of geography.

72. M. Delorgna has proposed a new projection, possessing the property of representing, by equal spaces, countries of equal extent †. In order to construct the map of a hemisphere, he conceives it to be divided into half-spindles, or half-gores, to use the mechanical term, by planes drawn through its axis; and upon the centre of the great circle perpendicular to that axis, he describes another, of which the area shall be equivalent to that of the hemisphere. It is easy to perceive that each half spindle will be represented on the circle in question by a sector, of which the angle will be equal to that formed by the two planes comprehended in the spindle. This is demonstrated, fig. 30, in which P represents the pole, $A\,B\,D$ the plane of the equator, $A\,P\,B$ a half spindle comprised between two meridians and the equator, the circle $A'\,B'\,D'$ is that of which the area is equal to that of the hemisphere $P\,A\,B\,D\,E$. It will be discovered, without difficulty, that the radius $A\,C$ must, in general, be equal to the chord $A\,P$ of the arc of the meridian, comprised between the pole and the plane, which terminates the spherical cup to be represented ‡.

In the polar projection traced after this principle, the meridians are the radii of the circle which terminates the map; the parallels are circles concentric to the first, described with a radius equal to the chord of the complement of the latitude; the quadrilaterals formed by the meridians and the parallels which terminate a zone, are equal and rectangular as on the sphere; and for this reason the configuration of the countries is not much altered. The distances are not measured immediately by the right line which joins the two points to be compared;

* Acta Academiæ Petropolitanæ, tom. 1. pars 1.

† Principi di Geographia Astronomico-Geometrica, Verona, 1789, 4to.

‡ In fact, if Π represent the relation of the circumference to the diameter, R the radius of the sphere, h the height $P\,c$ of the cup $P\,a\,b\,d$, and r the radius of the equivalent circle, we shall have:

$2\,\Pi\,R\,h = \Pi\,r^2$, from which we draw $r^2 = 2\,R\,h$; r is then the proportional middle between the diameter of the sphere and the segment $P\,c$.

pared; but it does not differ much, and the exact proportion may be easily deduced. These properties, which cannot be denied to the projection of M. Delorgna, constitute, in his opinion, those essential to a good geographical projection; and, in fact, it must be useful to adopt in common maps this projection, which is very easy to construct when a hemisphere is wanted terminated by the equator. The author has also pointed out the method of applying it to particular maps; but the drawing becomes complex when there is question of hemispheres terminated by the horizon, because we must then substitute to the meridians and parallels the azimuth circles, and the alimicanters, or those parallel to the horizon of the place assumed for the centre of the map; circles to which we cannot refer the latitudes and longitudes, except by a particular construction or calculation. The inconvenience is the same with regard to hemispheres terminated by the meridian; but, as I have said above, the difficulties of projection are of small account, when advantages will result from it in the daily use of maps.

73. The operations effected in the preceding century, in order to determine the figure of the earth by the measure of the degrees of the meridian, and of the parallels, have given birth to a very important kind of projection, as it is that of the grand map of France by Cassini, the most beautiful geographical work which has been executed to the present day.

When the admeasurement of a degree of longitude was undertaken, the difficulty was seen that there is in drawing exactly on the earth a parallel to the equator *. In fact, if by an alineation, directed by the means of vertical rods, and perpendicular to the meridian of a place, we may determine a series of points, it is evident, that supposing the earth spherical, they would belong to a great circle determined by the vertical plane, drawn perpendicularly to the meridian in question, and which upon the earth answers to the celestial circle, which is called the first vertical. The parallel soon leaves that circle, which it only touches at the point where it intersects the meridian (section 49). In a spheroid, the curve perpendicular to the meridian has a double bend, and the enquiry into its qualities has occupied many geometricians †.

The meridian and its perpendiculars being lines which are the most easily drawn by astronomical and geodesiac operations, it is to the meridian of the observatory at Paris, and to its perpendiculars, that the points of the map of France are immediately referred, their latitudes and longitudes having only been concluded *à posteriori* and by calculation ‡.

In order to form an idea of the manner in which this projection represents terrestrial spaces, it must be observed that the great circles perpendicular to the meridian, supposing the earth spherical, all intersect each other at the poles of that meridian, and, in consequence, converge one towards the other (section 49); while upon the map, where the same meridian is a straight line, they become parallel to each other. It thence follows, that the portions determined by two circles perpendicular to the meridian, are represented by rectangles of the same length, but larger towards their extremities. Thus the distances and the areas cannot be measured on the great map of France, but, by approximation, and because the extent in longitude is not so considerable, that the convergence of the perpendiculars to the meridian should produce an error of any consequence in the common occasions of geography.

74. The rhumbs of the wind, or the directions indicated by the compass, which have the property of intersecting under the same angle all the meridians which they meet, and which, for this reason, bear on the globe the form of spiral lines, are also represented by curved lines of that kind in all the maps where the meridians are not parallels. Mariners, who direct all their courses by these lines, cannot, therefore, conveniently refer to that kind of map the course which they have made, nor find that which they mean to perform, because of the difficulty of measuring with compasses the arcs of a curve, and have, in consequence, sought a projection in which the meridians should be straight parallel lines.

When there is only occasion to represent very small spaces, or, at least, little extended in latitude, there may be substituted to the spherical zone the developement of a cylinder, either inscribed or circumscribed on that zone, and of which the axis may coincide with that of the globe. The meridians which result from sections of the cylinder by planes passing through its axis, are represented by right lines parallel to that axis; the planes of the parallels intersect the cylinder according to circles parallel to its base, and which become right lines in the developement. Such is the construction of *flat maps*, of which the invention is ascribed to Don Henry, prince of Portugal. Their defects are analogous to those of the conical projection, and even more considerable; for in this there may be given to two parallels their real length with regard to the degrees of latitude, and to one only on the flat maps, namely, to the inferior for the developement of the circumscribed cylinder, and to the superior for the developement of the inscribed cylinder. We might also employ the cylinder constructed on one of the intermediate parallels, and which would be in part interior and in part exterior to the sphere; but in this way, the extent in longitude would only be exact towards the middle, though the error would be divided betwixt the two extremities. Questions also present themselves here similar to those which Euler has resolved for the conical projection. It is evident, for example, that the parallel which serves as a base to the cylinder, might be placed in such a manner that the area of the developement should be equal to that of the spherical zone.

The drawing of these maps may be effected without difficulty, as soon as the position of the terrestrial parallel to be developed is fixed; the only object being to

* Mem. de Cassini, Acad. des Sciences, 1745.

† Mem. de l'Academie des Sciences, année 1733.

‡ See the *Traitè analytique des Mouvemens apparens des Corps cèlestes*, by Dusejour, t. ii, and the *Description géometrique de la France*, by Cassini.

give to the degrees of longitude on that parallel the size which they ought to have, in regard to that assigned to the degree of latitude.

The line *H G*, fig. 27, being supposed parallel to the axis *C P*, and equal to the developement of the arc *B F*, will be the meridian of the map, intended to represent the zone comprehended between the parallels of the points *B* and *F*. The developement of the middle parallel, whose radius is *E e*, will give the degrees of longitude. From the same figure may be observed the deficiency of the map on the extreme parallels, since the radius *G g* is smaller than *B b*, and the radius *H h* greater than *F f*.

These maps being only proper for very small parts of the world, are now nearly abandoned; and in the greater part of those to be met with, which are Dutch, there is no scale of longitudes, but only of latitudes and the rhumbs of the wind.

75. The use which mariners make of charts is only to trace exactly in its length and direction the course which they have made, and to determine the distance from different parts of the coasts, and the direction which they must observe to arrive at or to avoid them. It must be remarked, that by the direction to be followed to proceed from one point to another, mariners do not understand the nearest course, which upon a sphere is a circle, for the instrument of which they make use, the compass, does not indicate immediately the nearest course, which intersects the different meridians under unequal angles (section 49).

Mercator and Edward Wright have imagined the projection of *reduced maps*, which perfectly answer the conditions required. The meridians are there straight parallel lines, equidistant, and intersected at right angles by the parallels to the equator; but the intervals which separate them, increase in proportion as we advance towards the poles, in a relation precisely the inverse of the diminution of the degrees of longitude upon a globe. Thence it follows, however, that the distances in longitude, measured upon each parallel, have, with regard to the correspondent distances in latitude, the same relation as on a globe.

The drawing of these maps is attended with no difficulty, except the construction of the scale of latitudes, for which there are tables calculated with great care, even observing the oblate figure of the earth. They bear the name of tables of increasing latitudes, because of the augmentation of the length of each degree of latitude, in proportion as they approach the pole, and I shall indicate in another place the principles of their formation.

It is evident that there must not be sought on the reduced maps neither the relations of the extent of countries, nor the exactness of their configuration, for this projection considerably augments the regions which are placed near the poles, although it share with the stereographic projection, the quality of preserving similitude in very small parts of the globe; but these defects are not attended with inconvenience in charts, which may be regarded as instruments, designed graphically to resolve the principal questions of pilotage, which they do with the greatest exactness and facility.

76. It is to the developements of the *globe* that we must refer the construction of spindles or gores, which are drawn upon paper in order to cover globes of a moderate size. The surface of the globe is divided into twelve or eighteen parts, according to the size of its diameter, by drawing meridians from 30° to 30°, or from 20° to 20°. The space comprehended between two of these meridians having a very small curve in regard to breadth, may be considered as forming part of a cylindrical surface, circumscribed on the sphere, according to the meridian which divides it into two equal parts. This meridian being developed in bearing perpendicularly on each side, according to the law of ordinates, the half-widths of the portions or parallels comprehended between the meridians, which terminate the spindle, we obtain the form of its entire developement. Sometimes it is truncated at the two extremities, at fifteen or twenty degrees from the poles; and these two zones are drawn apart as if they were flat. This procedure, as may be seen, is only an approximation, and can only serve for the manufacture of globes, as it admits the advantages of engraving in multiplying the number; for the drawing thence obtained, only presenting disjoined portions, cannot serve as a map. For this reason I shall not dwell on the subject, which more properly belongs to the construction of geographical instruments.

77. I have now described the different kinds of maps, and shewn their properties and defects; but it must be observed that the word defect only refers to the common way of considering maps; for if we regard them with Euler and Lagrange* as a transformation of co-ordinates, it is always mathematically possible to obtain on a map all the geographical relations which may be required. Only, as we have already observed, some relations are more easily obtained than others.

In fact, the position of different points of the sphere being determined by their latitude and longitude, as the different points of the plane are by two co-ordinates, if we assume on a map lines subjected to a mathematical law, in order to represent these co-ordinates, we shall establish, between the points of the map and those of the sphere, such a relation that we may assign on the map the equation of the lines, which correspond with circles, or even with any curves traced on the sphere, and compare the relative spaces with each other. Reciprocally it may be asked, what ought to be the nature of the co-ordinates of the map, that is, of the lines which represent the meridians and the parallels, in order that the parts of that map may have such and such a relation with those of the sphere? In resolving this last question by the most refined analysis, Euler and Lagrange have determined *à priori* the construction of different kinds of maps, according to the qualities which they ought to possess.

It is unnecessary further to enlarge on this way of

* Mémoire d'Euler, *Acta Academ. Petropol.* tom. 1. p. 1, Mémoire de Lagrange, Acad. de Berlin, année 1779.

viewing maps. In this circumstance, as in most others, necessity has conducted, by particular and indirect paths, to results immediately useful, long before the discovery of the general theory.

78. When we have chosen the projection of the map about to be constructed, and traced the meridians and the parallels according to the law of that projection, the whole is divided into quadrilaterals, in which are inscribed, according to their longitude and their latitude, the points which have thus been defined. This operation becomes the more easy when the meridians and the parallels are restricted; and they are placed in consequence from 10° to 10°, or from 5° to 5°, or even each degree, according to the extent of country given in the map. Maps are also distinguished into *general* or *geographical*, as the planispheres, the four parts of the world, the great states; *particular* or *chorographic*; and, in fine, *topographic*, which embrace only very small extent, as the environs of a town for example, and present in detail the villages, hamlets, and, by picturesque means about to be mentioned, the features of the land, as woods, hills, valleys, rivulets, ravines, &c.

It is proper to remark, that, in whatever projection, the quadrilaterals formed by the meridians and the parallels near the centre of the map differ so much the less from rectangular parallelograms, as they occupy small space on the map or on the globe; as the map is on a large scale; or as the meridians and parallels are more related to each other. Hence all the projections become blended with a geometrical survey, when the curve of the earth is little sensible throughout their extent; and the distances are then measured by rectilinear scales, which indicate a certain number of itinerary measures used in the country represented, or in that where the map is composed.

When the effects of projection begin to be perceivable, the true way of indicating the size of the map, or its relation with the space represented, is to fix the size of a degree of latitude. It might be wished that there were adopted for the different classes of maps, scales not only forming aliquot parts, but according to the decimal order, as has been appointed by the *Depot de la Guerre* for the maps to be there executed. By this means, general maps become perfectly connected with particular maps and topographical plans, because the details increase from one class to another by relations easy to seize.

The degree of latitude in the geographical maps being assumed as an unit, that of the chorographical map ought to be represented by one of the numbers 2, 5, or 10, which are exact divisions in the decimal system; and, in like manner, for the degree resulting from the dimensions of the topographic plan, with regard to the degree of the chorographic map.

A collection of maps, either of the world or of a country, is called an Atlas; and the most convenient above all those which serve to facilitate the reading of a work, and not those in the largest form, but those which lead to the details by a gradual succession of maps more and more particular. The eye can rarely embrace without difficulty the considerable space comprised in a sheet of the largest paper, above all, when it must be unrolled, and numerous names are sought; but there are some cases in which the necessity of passing too frequently from one map to another becomes an inconvenience to be shunned, and maps of a large form are then more expedient.

79. After these explanations, it may be conceived that the size of a map may be regulated according to the intention; and that maps ought to be constructed in the inverse order of their details; namely, the topographical plan reduced from plans taken trigonometrically upon the land; chorographical maps from an assemblage and reduction of topographical plans; and, in fine, geographical maps, properly so called, from an assemblage and reduction of chorographical maps.

I shall not here explain the methods of taking surveys, as they belong to geometry and trigonometry; but shall content myself with shewing how several surveys are united in one topographical plan.

In order that two particular plans may be joined, they must have two common points, or a line of the one may be applied on a line of the same denomination in the other. Then describing this line on the paper designed to receive the topographic plan, so that there may be on each side a space proper to comprise that about to be drawn, it only remains to combine by triangles, either with the points of that line common to the two plans about to be united, or with the points to be placed afterwards, all those comprehended in each plane; and, by constructing equal triangles, in a similar position with regard to the leading line on the topographic plan, the two plans may be united without difficulty. But if they must be reduced, as most commonly happens, triangles must be formed on the topographic plan, like those on the sheets of the survey, so that the sides of the first may be to those of the second in the relation exacted by the reduction.

When the leaves of the survey are marked with the meridian, either true or magnetic, and that this line is the same in all the sheets to be reunited, then the points of each leaf are referred to the meridian, and to a perpendicular drawn on that line, by a point common to two contiguous leaves. The distances of all the points from each of these right lines is measured parallel to the other, and these distances are referred, either such as they are, or reduced to the meridian and perpendicular drawn in the topographic plan, to represent those which are common to the sheets about to be joined. This leads me to speak of the frame divided into squares, employed in reducing all drawings, and which is very convenient for the construction of the details of maps.

The sheets which are to be united are divided into squares by parallel lines, perpendicular to that which is common to the sheets, and the more they are multiplied there is the more facility in judging of the place to be occupied in each square, by the points and circumstances herein contained, and inscribing them with a strict resemblance in the corresponding squares traced on the reduced plan.

This operation is represented in fig. 31. The sheets *A B C D, E F G H*, having in common the right lines *C D* and *E F*, are divided into squares, of which the sides are parallel and perpendicular to these right lines; the reduced plan, *a b f e*, is divided in the same manner, in regard to the line *c d*, representing the common right line, but the sides of each square are the halves of those of the sheets *A B C D, E F G H*, so that the objects marked

marked on these sheets are reduced to half their dimensions, and to a space forming only one quarter of what they occupied at first. To copy the design traced on each of the original leaves, we either imitate by the eye in the squares of the plan *a b f e*, what is contained in the correspondent squares of the sheets *A B C D*, *E F G H*, or rather, for more exactness, we take marks or numbers on each of the sides. When we do not wish to draw lines on the drawing to be copied, a very level glass, of very equal transparency, is placed above it, upon which squares are drawn with a glazier's diamond, and two perpendicular lines are made to coincide on those which are to serve for the junction of the sheets or the points which determine it.

80. When a topographical plan is thus formed by the union of detached surveys, in order to pass to chorographic maps, we must not only assemble the plans, but subject them to the projection to be adopted. For this purpose we trace on these plans the meridians and the parallels in right lines, respectively parallel and perpendicular, as these circles are when only extended over a very small portion of terrestrial surface. The correspondent quadrilaterals are also traced on the map to be constructed, but agreeably to the laws of projection; and there only remains to draw in these quadrilaterals what is contained in the squares comprehended between the meridians and the parallels of the topographic plan. When extreme precision is required, as these squares do not strictly correspond with the quadrilaterals, we take, by reference to the sides of the first, the distances of the principal points therein contained; these distances are converted into subdivisions of the degrees of latitude and longitude; and the like are taken from the parallel or meridian contiguous to the corresponding quadrilaterals of the map.

In thus constructing, by small portions, the drawing of a map, the embarrassment is saved which is occasioned by a too wide extension of the compasses; and great errors and their consequences are avoided, as the foundation rests on the sides of the same little square: besides this space being very small, any eye of the least experience immediately perceives the slightest error, which may have been committed in the transposal of the objects.

It may happen that the topographic plan is not marked with the points of the compass, or being marked in the direction of the magnetic needle, we do not know what was the variation of the needle at the time the plan was taken, or reduced, or even on the spot of the operations. This essential object may be supplied, when the plan contains two points of which the respective position is known; as in joining these two points by a right line, we shall find the angle which this right line forms with the meridian, and we may in consequence place it in its due relation to the meridian, or construct by means of a given angle the meridian of the plan.

By the same method may also be determined the scale of a topographical plan, when it has been omitted; for if we know the distance of two points in that plan, we have only to divide into parts, proportioned to the itinerary measures contained in this distance, the right line which joins these two points; which thus becomes the scale of the map, and shews the distance of all the other points from each other.

81. The passage from chorographical maps to a general or geographical map is analogous to that from topographical plans to the chorographic map, by transposing into the quadrilaterals, formed by the meridians and the parallels of the geographical map, what is contained in the correspondent quadrilaterals of the chorographic maps, which are assembled and reduced.

It is above all in this last operation that we perceive the necessity of astronomical observations, in order to fix the position of points at some distance from each other: it may in fact happen, that in the topographical maps, which serve for the construction of the chorographic, there may be errors common to all points of the map, as distances too small or too large in the same direction, and that these errors remain on the chorographic maps; and, in re-uniting the latter upon a general map, the large spaces which it represents will be found too much restricted or dilated without the errors being perceived. But when there is placed directly on the chorographic maps, or at least on the geographic, a certain number of points, of a latitude and longitude strictly determined, these points will define upon the map certain spaces, in which these points and intermediate details may be laid down; and if this do not happen, the excess or deficiency perceivable, arising from the errors of many maps assembled, is divided among all the points of each, and thence becomes almost insensible, except there be some reason to ascribe the inaccuracy to particular points which must be corrected by the astronomical observations upon others.

To lend more exactness to the copies of their maps, it is upon the copper itself that the geographers of the *Depot de la Marine* execute their graduation; and they even attend to the alteration of dimensions occasioned by the drying of the paper. The procedure followed in these operations may be found in the Voyage of the ship Flora, drawn up by M. de Fleurieu, and the article CARTE of the *Encyclopédie Methodique*.

82. It is not difficult to perceive that we may, by the means above indicated, transfer upon globes the details marked in chorographic and geographic maps. This operation, which I have mentioned in sect. 46, consists in dividing, by meridians and parallels, the surface of the globe into quadrilaterals so small, that the curve of that surface may be little sensible, and to draw in these quadrilaterals what is contained in the correspondent quadrilaterals of the maps of various parts of the earth.

Such would be the procedure in the construction of maps, if we might in all countries begin with topographic maps, and materials reduced to the same measures, equally accurate and perfectly accordant; but unhappily this is not the case, there being but a small number of countries, and France alone completely, which have been trigonometrically surveyed. As to the other parts, there are only maps constructed after different methods, and upon data which are little exact. It is only in endeavouring to reconcile all those that represent the same country, that we know the degree of confidence that may be placed in each, and that we may approach the real delineation.

After some observations on itinerary measures, M. Lacroix thus proceeds:

When

When we have established the agreement of the measures, or of the scales employed in different maps, we can construct a graduation to those which are destitute of it, as soon as we know, either immediately, or by the distances of given points, the latitudes and longitudes of whatever point of these maps. We may in consequence compare, by the latitudes and longitudes which they assign to the same places, the maps which comprehend the same regions; and this manner is the more convenient, because it easily permits a reference to the difference of projections in these maps.

The same point being thus placed under different latitudes and longitudes in several maps, in order to procure to these data the degree of confidence which they merit; it must be observed how these maps present other circumstances, as the respective situations with regard to points well determined, such as the capitals of large countries, or of their provinces, the distances of these towns from places of less consequence, the configurations of the shores, of the courses of the rivers, of the chains of mountains, of the high roads, the limits of territory; and to examine in what they agree and in what they differ under each of these relations. The latitudes, more easy to be observed than the longitudes, are generally better established upon maps drawn on the relations of travellers. The common defect of the ancient maps is considerably to augment all the distances of the places in the direction of east and west; and the error becomes the greater in proportion as the points are distant from the principal meridian, which regulates the longitudes of the others. This fault is very remarkable in the maps of Ptolemy with regard to the differences of longitude between Alexandria and the other towns upon the shores of the Mediterranean. The maps of the Sansons, of Jaillot, and others, compiled towards the end of the seventeenth century, also extend all the countries in the direction of the longitudes. Such maps still furnish useful materials when the positions are corrected in the direction of east and west, by dividing, proportionally to the distance from the principal meridian, the difference between the longitudes assigned in these maps, and those which result from new determinations.

In his *Companion to a Map of the World*, (London 1794, 4to.) Mr. Arrowsmith offers the following practical remarks on projection *.

"As the Earth is of a form approaching very near to a Globe, or Sphere, it is evident that the only Map which can truly represent the figure of the various countries, and their relative bearings and distances, must be delineated on the surface of a Globe.

"But as Globes of a size proper to exhibit a Map sufficiently accurate, and containing all the information that is necessary or desirable, must be very bulky, and very expensive, it is necessary to have more portable and cheaper Maps, executed upon a flat surface; these, since the art of copper-plate printing has been in use, have generally been made upon paper.

"It is obvious, that such a Map, wherein is attempted to represent upon a plane surface that which is really spherical, must depart considerably from the truth; especially if it comprehends the whole, or a considerable portion of the world. It has, therefore, been an object which has engaged the attention of the most eminent geographers, to discover a projection (or arrangement, of the proportional parts of the Map) which should be liable to the fewest errors.

"The most natural method of representing a sphere upon a plane seems to be to divide it into two equal parts, and inscribe each of them in a circle: but as the equator, and the polar axis, which intersects that circle at right angles, and makes one of the meridians, must be supposed equal in length to the half of the periphery, (of which it is not quite two-thirds), it follows, of course, that the countries delineated upon, or near, these lines, must be reduced to somewhat less than two-thirds of the size of the countries of equal extent, which lie at the extremity of the circle; and that the lines drawn to measure the latitude, which are parallel to each other, or nearly so, must, in order to preserve as nearly as possible their proportional angles at the points of intersection with the meridians, form segments of circles, of which no two are parallel or concentric.

"There may be as many different projections as there are points of view, in which a globe can be seen, but geographers have generally chosen those which represent the poles, at the top and bottom of the Map; these, from the delineation of the lines of latitude and longitude, are called the stereographic, orthographic, and globular projections.

"I do not propose to detain the reader with a description of all the projections; some of which are so erroneous (for the purpose of constructing of Maps) as to deserve being consigned entirely to oblivion. But as projections of Maps form a pleasing and instructive exercise, and indeed indispensably necessary to the right understanding of Geography, by students, I shall describe the manner of constructing the Map that accompanies this work. But first hint at the Stereographic Projection †. Among the various positions assignable to the eye, there are chiefly two that have been adopted, wherein the eye is placed, either in the points (*D*, fig. 1.) or removed to an infinite distance; and hence this projection is liable to the great error of distorting the form of the countries, represented upon it, much more than is necessary. The only advantage is, that the lines of latitude and longitude intersect each other at right angles.

"This being observed by that excellent astronomer, M. de la Hire ‡, he invented a remedy for the inconvenience, by assigning to the eye a position at the point *O* (fig. 1.), the distance of which, from the globe at *D*, is equal to the right sine of 45 degrees; and hence the

* The grammatical errors are partly corrected.

† "The great geographer, D'Anville, has constructed his map of the World upon this projection, adapting it to Cassini's system of the figure of the earth, which makes the polar diameter longer than the equatorial."

‡ Hist. Acad. Scienc. 1701.

right

right line $G O$, which bisects the quadrant $B C$, also bisects the radius $E C$, and produces the similar triangles $O F G$, and $O E I$; and thus the other parts of the quadrant $B C$, and in like manner of the whole semicircle $A B C$, are represented in the projection nearly proportionable to each other, and to the eye perfectly so.

" This projection, as coming the nearest to a true representation of the globe, is called the Globular Projection: it is equal to the Stereographic in point of facility, and vastly superior to it in point of truth.

" *Geometrical Construction of the Globular Projection.*

" From the centre C (fig. 2.) with any radius, as $C B$, describe a circle; draw the diameters $A B$, and 90, 90, (be careful to draw them at perfect right angles,) and divide them into nine equal parts; likewise divide each quadrant into nine equal parts, each of which contains ten degrees; if the scale admits of it, every one of these divisions may be subdivided into degrees: next, to draw the meridians, suppose the meridian 80° W. of Greenwich, we have given the two poles 90, 90, and the point 80 in the equator, or diameter $A B$; describe a circle to pass through the three given points as follows; with the radius 90, set one foot of the compasses on the point 90, and describe the semicircles $X X$ and $Z Z$, then remove the compasses to the point 80, on the equator, and describe the arcs 1, 1, and 2, 2; where they intersect the semicircle, make the point, as at 1 and 2, and draw lines from 2 through the point 1, till they intersect the diameter $B A$, continued in E, then will E be the centre from whence the meridian 90, 80, 90, must be drawn, and will express the meridian of 80° W. longitude from Greenwich. The same radius will draw the meridian expressing 140° W. longitude, in like manner. Draw the next meridian with the radius $C B$, set one foot of the compasses in the point d, and describe the arcs $a a$ and $b b$, then draw lines as before, will give the point D, the centre of 90° W. longitude, and so of all the rest.

" The parallels of latitude are drawn in the same manner, with this difference, that the semicircles $X X$ and $Z Z$ must be drawn from the points A and B, the extremities of the equator.

" In the manner above described, with great labour and exactness, I drew all the meridians and parallels of latitude to every degree on two hemispheres, which laid the foundation of the Map now before us.

" We shall now drop a few hints on the advantage and disadvantage of Mercator's Projection.

" A method has been found to obviate some of the difficulties attending all the circular projections by one, which, from the person who first used it, (though not the inventor,) is called Mercator's Projection. In this there are none but right lines; all the meridians are equidistant, and continue so through the whole extent; but, on the other hand, in order to obtain the true bearing, so that the compass may be applied to the Map (or Chart) for the purpose of navigation, the spaces between the parallels of latitude, (which in truth are equal, or nearly so,) are made to increase as they recede from the equator in a proportion which, in the high latitudes, become prodigiously great.

" The great advantages peculiar to this projection are, that every place drawn upon it, retains its true bearing, with respect to all other places; the distances may be measured with the nicest exactness by proper scales, and all the lines drawn upon it are right lines. For these reasons, it is the only projection in drawing maps or charts for the use of navigators.

" Its only disadvantage is, that the countries in high latitudes are of necessity increased beyond their just size to a monstrous degree.

" Thus it appears, from this short view of three of the best modes of projecting Maps of the World upon a plane surface, that each of those which have been more particularly described, is attended with advantages and disadvantages peculiar to itself; it is obvious, that the only means to acquire a just idea of the various countries upon such a surface, is by a comparison of two maps, one laid down on the Mercator's Projection, and the other upon the best of the Circular Projections."

83. But the itinerary measures adopted by the civilized nations of Europe, where science has been cultivated, are in a great measure free from this difficulty, as most of them have been repeatedly compared either with the degree of the meridian, or with each other by means of their respective standards; for instance, the English, and the nautical miles, the degree of the meridian contains 69.2 of the first, and 60 of the second: the English foot is now known to be equal to 0.9384 of the French foot, or 11 inches 3.1 lines; and the English yard of three feet is equal to 33 inches 9.3 lines perch measure.

By similar comparisons and reductions the measures used in one country may be estimated in those of another; but it often happens that in the same kingdom there are local measures in particular provinces which are but little known, and which differ considerably from the general standard. The difficulty of comparing these often gives rise to great confusion; in France, for example, nothing can differ more than the league of one province from that of another: the perch likewise used by artificers is equally uncertain, varying from 18 to 22 feet.

84. It was to remedy this inconvenience that the French government resolved to adopt a new standard measure, which, being founded in nature, should be for ever independent of accidental circumstances. The METRE is the ten millionth part of the quadrant of the meridian, and the various subdivisions and multiples of this standard unity will be given in the subjoined tables.

85. The laborious operations recently concluded for the purpose of establishing the metrical system, have not only been the occasion of a great number of accurate comparisons being made of different modern measures, but have likewise induced many learned men to investigate the relation of these measures with those of the ancients. To succeed in this attempt, we have only the traditionary relations of ancient writers of the measure

measures of edifices, mostly either defaced, or entirely destroyed by time; and of the distances of cities from each other, which likewise have either disappeared from the surface of the earth, or whose position is still a subject of doubt and discussion. If we attempt to compute these distances from the writings of geographers, as Hipparchus, Ptolemy, and Strabo, a great difficulty arises from their using the same word "*ſtadium*," to express different measures. M. Gosselin, for example, has shewn that Ptolemy uses occasionally both the stadium of 500 and 700 to a degree.

The expedition of the French into Egypt, during the years 6 and 7 (1799, 1800), by procuring us very exact measurements of some of the most ancient and best preserved monuments of former ages, will afford us great assistance in these investigations. M. Girard has already presented a memoir on this subject, chiefly relating to the *cubit* of the Nilometer found in the island Elephantis, in Upper Egypt, an ancient edifice, formerly built to measure the increase of the Nile, a circumstance of great importance in a country whose fertility depends entirely upon it. It would be foreign to the design of this introduction to enter farther into this difficult subject: several very valuable works have been written on this subject, to which the reader is referred, vid. Traité des Mesures Itinéraires des Anciens, by D'Anville; Metrologie, by Paucton; Traité des Mesures, by Romé de Lille, &c. &c.

86. When different maps are to be compared, if the relation of their respective measures are known, a graduated ſcale may be constructed for them, provided the latitude and longitude of some point be known. And different maps of the same kingdom may be examined by observing the latitudes and longitudes which are assigned to the same place; and this method has the advantage of not requiring any attention to be paid to the different projections which may have been employed for their construction.

We may judge of the accuracy of different maps by observing the degree of discordance that prevails in the latitudes and longitudes; and to determine which merits the preference, other circumstances may be examined, such as the distances of places well known, as the capitals of kingdoms and provinces, the course of rivers, the configuration of their shores, chains of mountains, high roads, boundaries of territory, &c.; and by observing in what they agree, and in what they differ, we may form a judgment of their comparative accuracy. The latitude of a place being more easily determined than its longitude, is usually the most exactly placed in maps constructed from the relation and observation of travellers. The most common defect in ancient maps is to assign too great a distance to places situated east and west of each other; and this error is the greater as the places in question are farther removed from the principal meridian. This is particularly remarkable in the charts of Ptolemy, in which the longitudes of the places on the shores of the Mediterranean, and remote from Egypt, are made much too great. The charts of Janson, Jaillet, and others, constructed about the end of the 17th century, have likewise the same defect. These charts afford, nevertheless, useful materials, when the longitudes are proportionally corrected, by comparing the extreme error with modern observations. When no reason appears why any preference should be given to one chart over another, a new one may be constructed, by taking the mean of all the longitudes and latitudes according to the usual arithmetical rule. With these new data, the general outline is to be filled up according to the rule given, No. 80 and 81.

87. In comparing smaller maps by means of the distances between different points (and which distances have perhaps been the foundation of the map), it is useful to assume two points, whose distance may serve as a standard to which the rest may be compared. In comparing the position of a third point with those on two different maps, two triangles should be constructed on the ſame base, and the difference of their summits will shew the discordance between them; and the middle point should be chosen as the mean between them. Three comparisons of this kind will give a triangle, and several a polygon; and the mean position will be found by taking the centre of gravity of the figure thus formed. The theory of this operation will easily be understood by those conversant in the principles of statics; I shall only add, that the centre of gravity of a triangle is found by drawing lines from each angle to the point bisecting the opposite side; and this rule will suffice for three determinations.

When, by this method, the distance of one point is determined from two others, supposed given in position, its longitude and latitude may be determined, and the place transferred on the new chart, whatever may be its projection. But if the chart includes but a very small space, the same operation may be more conveniently performed, by employing a *treillis* or ſcale of croſs lines to lay off on the new chart the mean of the different determinations.

It is not my intention to enumerate all the methods employed by geographers in the construction of maps from the different materials that occasionally come into their possession; enough has been said to enable the reader, if acquainted with the geometrical principles of the science, to apply them advantageously to practice, when an opportunity occurs, having sufficiently explained the nature and object of these various operations.

I have supposed materials to have been collected, not from trigonometrical surveys, but the observations and relations of travellers and historians. That nothing essential may be omitted, I shall add the method of reducing these materials into the form of a chart, particularly as it is from such relations that maps relating to ancient geography are constructed.

88. But, to proceed methodically, we should first examine the nature of the data that can be collected from the relation of travellers and historians: these are of two kinds, the one comprehends the tradition of certain celestial phenomena, from which at least the latitude can be calculated, as the length of the solstitial days, the lengths of the shadows of gnomons; the other is the statement of the length of the road between the two places, determined with a greater or less degree of precision, and sometimes the indication of the direction or bearing of one place relative to the meridian of the first. It will be shewn, that this latter method is that which is adopted by mariners, and if exact, would

be sufficient to give the situation of a place with precision.

Among the data of the first class may be cited the remark attributed to Pytheas, a traveller who lived, it is supposed, about 120 years before the Christian era, in the Greek colony established at Marseilles.

He relates, that in the isle of Thule, situated to the north of the Britannic isles, and the most northern land known at that time, there was no night at the solstice of summer, nor no day on the solstice of winter. This phenomenon places the island, mentioned by Pytheas, under the polar circle, and can only agree with Iceland; and this seems confirmed by what the ancients relate of the magnitude of this island; nevertheless, some difference of opinion still subsists on this subject, partly because of the great distance of the place from the Britannic islands, and the difficult navigation incidental to so inclement a climate; and partly because later authors than Pytheas have spoken differently of it. Stephanus of Byzantium, for example, describes the day as 20 hours long in summer, and four hours long in winter; this would bring it much nearer, and within a few degrees of the Britannic isles. But the account given of it by *Procopius, the Greek historian*, would make us imagine it to have been still farther north. Without entering into this controversy, I shall only observe, that the knowledge of geography has varied so much in different ages, that some countries have become unknown and forgot, while new ones have been discovered; so that the name of *Thule* may really have been given to very different places.

If we prefer the authority of Pytheas, whose description seems very exact, and moreover relates to a phenomenon which must have appeared very remarkable to the southern inhabitants of Europe, we must suppose the place under the polar circle; and to deduce the latitude, we must take into consideration the diminution of the ecliptic since the time this author lived. Admitting the change to be 50″ for every century, the total change for about twenty-one centuries will be 17′ 30″; the present obliquity being 23° 28′, in the time of Pytheas it must have been 23° 45′ 30″. Hipparchus, who lived near two centuries later than Pytheas, supposed it 23° 51′ 20″, and whichever of these determinations we adopt, the Thule of Pytheas would be under the parallel of 66°.

But if we adopt the length of the solstitial day, as given by Stephanus of Byzantium, we shall only have 63° for the latitude of Thule.

The same Pytheas relates, that at Marseilles a gnomon divided into 120 parts, projected at the summer solstice, a shadow whose length was equal to 41⅔ of these parts. By constructing a right angled triangle whose sides are in this ratio, it appears that the altitude of the sun must have been 71°; if from this the obliquity of the ecliptic as established by Hipparchus at 24°, in round numbers be taken, there will remain 47° for the height of the equator at Marseilles, or 43° of latitude.

Sometimes the Greek astronomers have indicated the height of the sun in cubits each of 2°. According to Hipparchus, the sun's altitude at the winter solstice was only nine cubits on the parallel of latitude passing through the mouth of the Borysthenes (at present the Dnieper). This supposes the altitude of the sun 18°, and the latitude computed from this is 48°, which differs but little from modern determinations.

It was from this kind of data that Hipparchus divided the whole distance from north to south of the known world into parallels. The table of climates (N° 20) calculated by this astronomer, indicated the principal celestial phenomena for every degree of latitude, and thereby enabled attentive travellers to verify or improve the state of geographical knowledge.

89. It is not now exactly known in what manner Eratosthenes, and afterwards Hipparchus settled their longitudes, the works of these early geographers not having been transmitted to us; it is supposed, however, that it was by the means of itinerary distances, which was very applicable to places in the Mediterranean, and along its coasts, which lay in an east and west direction.

With respect to places not so conveniently situated, they combined these distances into a system of triangles, which method I shall exemplify by a case taken from the work of M. Gosselin, entitled, "Recherches sur la Géographie systématique et positive des Anciens."

From the defile called Caspiæ Pylæ to Babylon, Hipparchus reckons 6,700 stadia. From Babylon to Suza 3,400, in the direction of a parallel to the equator upon which he supposed both these cities to be situated; and lastly from Suza to the Caspiæ Pylæ 4,900; these three places form the triangle B, S, P, (fig. 32.) the initials of the places represented. If a perpendicular PA be drawn from the summit P of this triangle to the opposite side BS, which represents the parallel passing through Babylon and Suza, the length of this perpendicular 4,705 stadia, will be the difference of latitude between the Caspiæ Pylæ and Suza. This distance, estimated in degrees, (700 stadia to a degree) gives 6° 43′, for the difference of latitude, and that of Suza being fixed by Hipparchus at 33° 34′, the latitude of the Caspiæ Pylæ would be 40° 17′

The distance SA, contained between the extremity of the perpendicular PA and Suza, 1,370 stadia, gives the distance between the two places measured from east to west.

To conclude with some degree of precision, the difference of longitude expressed in degrees, it would be requisite to attend to the diminution of the degrees between these parallels, and which are intersected by the oblique line joining these two points; but this correction would be very little in comparison of the error which more modern observations have detected in these ancient determinations, and which arises, not only from the curvature of the earth being neglected, but because the itinerary measures were estimated in a very vague and inaccurate manner, by days journeys either by land and sea, in which were reckoned the different windings of the road and the sinuosity of the shore. It is only therefore, by a very careful investigation of different authorities, and by a judicious choice of different data, that the errors of one can be rectified by those of another. The circumstance on which critics place their greatest reliance, is the probability that the mean of a great number of these determinations will not differ widely from the truth, since it generally happens, that when an error has been found in one direction, the fear

of falling into the same, produces another in an opposite direction, and from these considerations results tolerably accurate are sometimes obtained from very defective materials.

But it is the detail of the particular configuration of each country that has been of the greatest use in improving our knowledge of ancient geography, for these local circumstances have been usually very faithfully described, not only by historians but by poets. Our modern geographers make the ancient map which they propose to construct subservient to the configuration of the country as recently determined, and by this means are able to explain the meaning of many passages in ancient authors, and to determine the position of places which they have described. It is thus, that the Travels of M. Choiseuil Gouvier into Greece, and M. Chevalier to the Plains of Troy, have afforded very valuable documents to M. Barbier du Boccage, for the construction of his atlas to the *Travels of Anacharsis*; and it is well known, what utility d'Anville derived in constructing his maps of Italy and Greece from a judicious comparison of ancient and modern relations.

Historians who often had nothing in view but to relate the marches of armies, only indicate the route by the succession of places, without noticing the turnings and change of direction. In this manner military maps were sometimes constructed; for example, the one found in 1547, among the papers of Peutinger. This chart, though 22 feet long, was only one foot broad; it appears to have been constructed in the time of Theodosius the Great; it embraces all the extent of the then known world, but diminished in breadth, so as to appear absurd, till we reflect that it is only intended to indicate the distances of places, and not their relative positions, or the configuration of the country, which could not have been preserved in this form, which was suited to be rolled up in a small space; yet this map is extremely valuable, since the distances of those places which are known appear to be very exact, from which we conclude, that those which are now destroyed or forgotten are so likewise.

It was by a similar comparison, and from a knowledge of modern geography, that M. Gosselin, in the work above-mentioned, fixed the extent of the navigation of the Carthaginian Hanno, and the historian Polybius along the coasts of Africa.

By these methods the study of ancient geography has been reduced to a system, by which the identity of ancient cities and places is established with those more recently discovered. And this is accomplished either by the similitude of the country with that formerly described, its relative situation with respect to others that are known, and sometimes by ancient monuments and traditions; and lastly, by the similarity of name, conformity of language, and by the manners of the inhabitants. This method also is sometimes applied to the long voyages undertaken in the 16th century, the tradition of which is often extremely confused, the narrative of them being usually drawn up in too confused a manner to afford the requisite data for the determination of the situation of the different places which were visited by these early navigators.

91. It is already been remarked, (N° 88.), that besides the itinerary or linear distance of a place, it is necessary also to have its direction. Before the discovery of the compass this could not be very accurately ascertained. The ancient navigators, unprovided with instruments, directed their course by the circumpolar stars, chiefly by those in the great bear, our present polar star being 12° from the pole in the time of Pytheas. They divided the horizon into a few sub-divisions, often determined by local circumstances, as appears by the names they gave to the winds.

The Greeks at first gave only four names to the winds, corresponding to the four points, north, south, east, and west, called afterwards the cardinal points. These names were

Eurus	or the	East
Zephyrus	-	West
Boreas	- -	North
Notus	- -	South.

They afterwards added four others, corresponding to the four points in which the sun rose and set at the winter and summer solstices. Seneca in his Questiones Naturales, has given their names.

Subsolanus or	Apeliotes.	East wind.
Vulturnus.	Eurus.	Winter rising.
Euronotus.		Between this last and the south.
Auster.	Notus.	South wind.
Lebonotus.		Between the south and winter setting.
Africus.	Lebs.	Winter setting.
Favonius.	Zephyrus.	Weſt.
Corus.	Argestes.	Summer setting.
	Thraseias.	Between this and the north.
Septentrio.	Aparetias.	North.
Aquilo.	Meses.	Between this and summer rising.
	Cæceas.	Summer rising.

From this table are derived twelve divisions, which if equal, would contain each 30°, but the rising and setting points determined by the solsticial amplitudes of the sun, depend on the obliquity of the ecliptic and the latitude of the place. This method of subdivision was therefore too local and partial to continue long in general use.

Vitruvius has transmitted a division of the horizon into twenty-four parts of 15 degrees each, and the names assigned to each wind are as follows.

Solanus.	East wind.	Favonius.	West wind.
Ornithiæ.		Etesiæ.	
Cæcias.		Arcius.	
Eurus.		Caurus.	
Vulturnus.		Corus.	
Euronotus.		Thrascias.	
Austra.	South wind.	Septentrio.	North wind.
Altanus.		Gallicus.	
Lebonotus.		Supernas.	
Africus.		Aquilo.	
Subvesperus.		Boreas.	
Argestes.		Carlas.	

By this distribution, it is easy to assign the angle

which any particular wind makes with the meridian, for example the direction of the wind Boreas being the fourth after the north, necessarily makes an angle of 60° with the meridian line.

Modern navigators divide the horizon into thirty-two parts or rhumbs, each quadrant containing eight. In the occean these are denominated after the cardinal points, but in the Mediterranean they are known most commonly by particular names.

The following table will shew in what manner these correspond with each other. It begins from the east that it may the more easily be compared with the preceding.

In the Ocean.		In the Mediterranean.
East.	-	Levante.
E. by S.	-	Quarta di levante sirocco.
E.S.E.	-	Levante sirocco.
S.E. by E.	-	Quarta di sirocco levante.
S.E.	-	Sirocco.
S.E. by S.	-	Quarta di sirocco ostro.
S.S.E.	-	Ostro sirocco.
S.E. by S.	-	Quarta dell' ostro sirocco.
South.	-	Ostro.
S. by W.	-	Quarta dell ostro garbino.
S.S.W.	-	Ostro garbino.
S.W. by S.	-	Quarta di garbino ostro.
S.W.	-	Garbino.
S.W. by W.	-	Quarta di garbino ponente.
W.S.W.	-	Ponente garbino.
W. by S.	-	Quarta di ponente garbino.
West.	-	Ponente.
W. by N.	-	Quarta di ponente maestro.
W.N.W.	-	Ponente maestro.
N.W. by W.	-	Quarta di maestro ponente.
N.W.	-	Maestro.
N.W. by N.	-	Quarta di maestro tramontana.
N.N.W.	-	Tramontana maestro.
N. by W.	-	Quarta di tramontana maestro.
North.	-	Tramontana.
N. by E.	-	Quarta di tramontana greco.
N.N.E.	-	Tramontana greco.
N.E. by N.	-	Quarta di greco tramontana.
N.E.	-	Greco.
N.E. by E.	-	Quarta di greco levante.
E.N.E.	-	Greco levante.
E. by N.	-	Quarta di levante greco.

Each of these divisions containing $\frac{1}{32}$ of the whole circumference, is equal to 11° 15′; therefore if a ship sails N.E. by E., this rhumb being the fifth from the N. is equal to five times 11° 15′, or 56° 15′; in like manner all the other angles are attained, only care muſt be taken to observe if the direction is east or west of the meridian line. By reckoning either from the N. or S. point, the obtuse angles which the above method introduces are avoided. S.W. by S. for example being the third reckoning from S. towards W. corresponding to three times 11° 15′ or 33° 45′ from S. towards W. Notwithstanding the facility of this reduction, it would have been preferable to have divided each quadrant contained by the cardinal points into 90° each, according to the usual division of the circle; and which method is sometimes employed by navigators who aim at great precision. In general it may be observed that divisions of any kind indicate the ſtate of the science at the period of their establishment. The firſt mariners who used a compass, no doubt thought they had done a great deal in dividing the circle into thirty two parts. They chose this number probably from the facility with which compasses could be divided by continual subdivisions, as they were at that time conſtructed by the pilots themselves. The assemblage of these divisions in their well known form is called the "*mariner's card.*"

92. If the length and direction of a line commencing at a given point be known, the point at which this line terminates is also easily found.

If its length be not considerable, the curvature of the earth may be disregarded, and the meridians may be considered as parallel, and the rhumb-lines as strait lines; and to trace upon a plane surface the tract described in this case, it will only require a line to be drawn making an angle with the meridian corresponding to the rhumb-line; and to set off from the scale a portion of this line equal to the distance described, the point thus found is the point arrived at. Or it may be calculated, by drawing a perpendicular from one extremity of the above line, to the meridian passing through the other extremity; a right angled triangle will thus be formed, in which the distance between the point of departure and the perpendicular intercepted on the meridian will give the difference of latitude in linear measure, and which may afterwards be reduced to degrees of the meridian. In the same manner the perpendicular will correspond with the difference of longitude of the two points, and may be reduced by a similar process. But in making this reduction it is adviseable to calculate the value of the degree of longitude for the mean latitude between the two points, in preference to that of the point of departure. This operation is equivalent to dividing the degree of meridian by the cosine of the latitude.

Another question sometimes occurs, which is, when the direction of the tract is not known, but is to be determined by the latitude of the point arrived at. The construction of the chart consists in drawing the two parallels, and with the point of departure as a centre, describing a circle with a radius equal to the tract run over, the point of intersection of the circle and the second parallel is the point required.

To determine this point by calculation, a right angled triangle is formed, as in the last example, the difference of latitude is to be converted into linear measure. Then one side and the hypothenuse being given, the other side, or perpendicular, which is the difference of longitude, may be found as above.

93. When the tract described is of such a length that it becomes necessary to attend to the curvature of the earth, the above problems (as far as they relate to the reduction of the east and west lines into degrees of longitude) require an operation which can only be commodiously effected either on a reduced chart, or by a calculation the nature of which is now to be described. Since the rhumb-lines intersect all the meridians at the same angle, let us imagine the tract described to be divided into a number of smaller portions considered as strait lines, then through the extremities of these portions let meridians

meridians and parallels be drawn, each of these portions will thus become the hypothenuse of a right angled triangle, whose sides will be the difference of latitude and longitude expressed in linear measure. Let one of these be represented by the triangle ABC (fig. 33.); by trigonometry $AB : AC. :: 1.$ cos. BAC. hence $AC = AB.$ cos. BAC. but the angle BAC being constant for all the meridians intersected by the course, the difference of latitude proper for each small triangle will have the same factor, and the sum of all these differences, or the total difference of latitude of the extreme points will be equal to the sum of the portions, or the total length of the tract described, multiplied by the cosine of the angle which it makes with the meridian, as in the preceding case. The reduction into degrees is effected in the same manner.

The difference of longitude corresponding to BC may be found by means of the difference of latitude AC. for $AC : BC :: 1 :$ tang. BAC, hence

$$BC = AC. \text{ tang. } BAC.$$

But to know this difference in parts of the equator we must refer to what has been said (N 48.) where it is shewn that if L represents the latitude of the parallel passing through the point A. then B: to the corresponding arc of the equator : : cos. L : 1. and consequently this arc is equal $\frac{Bc}{\text{cos. } L}$, for BC subsitute its value found as above; and, The difference of longitude $= \frac{Ac}{\text{cos. } L} \times$ tang. BAC. The sum therefore of all these elementary differences of longitude will be obtained by multiplying the sum of all the values of the variable factor $\frac{Ac}{\text{cos. } L}$ by the constant factor tang. BAC.

If these portions be taken such that the difference AC may equal 1′ of the meridian or equator, then since $\frac{1}{\text{cos. } L}$ = secant L. the above expression becomes *difference of longitude* = 1′ × sec. L. tang. BAC. and the sum of the factors 1′ × sec. L will be obtained by adding all the secants for each minute, for the whole are between the point of departure and that of arrival.

This method, however, is only an approximation. Since even the arc of a minute is not rigorously a strait line, it may be made more exact by taking the secants for every 10th, or even for every single second; this process would be extremely tedious, but the integral calculus gives the exact expression for this sum to difference of latitude, or intercepted arc of the meridian being supposed divided into an infinite number of portions. It is in this manner that the values of all possible arcs have been calculated in the tables of meridional parts mentioned above.

The ratio of the degree of latitude to the degree of longitude being as 1 to cos. latitude, to preserve this ratio when the meridians are supposed parallel, it is necessary that,

1′ of the merid : 1′ of the parallel : : 1 : cos. lat.

or 1′ of the mer. $= \frac{\text{1′ of the parallel}}{\text{cos. } L} =$ 1′ of the par. × sec. L.

If we calculate therefore from 0° the successive minutes of the meridian, taking those of the parallel equal to the equator, we shall be led to each parallel by the sum of the secants, calculated from minute to minute, from 0° to that parallel.

The exact method of calculating these tables is derived from the preceding consideration, as likewise the construction of a traverse upon a reduced chart. But for the object I have in view the two following rules are to be observed.

For the first question.—After having obtained, as in (N 92.) the latitude of the point of arrival, take in the table of meridional parts, the difference of the numbers corresponding to the two latitudes, and multiply it by the tangent of the angle which the course or rhumb-line makes with the meridian, and the result will be the difference of longitude expresed in minutes of a a degree.

In the second question, the angle which the rhumb-line makes with the meridian is not given, but it may be deduced from the difference of latitude reduced into leagues, and by the distance described; with these data the differerence of longitude may be computed as above

For example suppose a vessel sets out from a point, situated in latitude 42° 3′ north, and has described 252 leagues N. E. by E. which is equivalent to an angle of 56° 15′ with the meridian, it will be found that the difference of latitude, reckoned on the line N. and S. is 140 leagues, or 7° towards the N. This difference being of the same denomination, must be added to the latitude of the point of departure, which gives 49° 3′. for the latitude of the of point of arrival.

The number is then to be taken from a table of meridional parts, corresponding to 49° 3′. viz.

viz.	- - -	3386,7
then for 42° 3′	=	2785,8
the difference	- -	6 0,9

the log. of which is to be added to the tangent of the angle 56° 15′, and the result, which answers to 899′, or 14° 59′, as the difference of longitude towards the east.

94. These rules being founded on strict geometrical principles would be perfectly exact, if the data were so likewise, but the direction of the tract described as given by the compass, is subject to much uncertainty, from causes well known to mariners, such as the variation of the needle, not always easy to determine, and the drift or lee way which a ship makes by the action of a contrary or side wind, which prevents it from following exactly the direction of the keel. These circumstances were very imperfectly attended to by navigators till within the last century. The measure of the distance actually described is also subject to considerable uncertainty.

The ancients often express it by the numbers of days' march or navigation, and it is frequently a question of great difficulty to ascertain the value of these quantities, which vary in a variety of ways, and in different ages, according to linear measures in use at the time, to the particular region, the manner of travelling, and the size of the vessel.

By duly considering all these circumstances we obtain a mean value, which is to be depended on, in proportion

to the number of facts from which it is derived. By attending to the forms of the various inflections of the roads in countries intersected by mountains, or by the course of considerable rivers, and likewise in level plains, general results may be obtained concerning the increaſe of length in the roads, produced by the interposition of these obstacles, and by which the distance must therefore be diminished, to obtain the result on a strait line.

To estimate the distance passed over by a ship, it is requisite to know the effect of currents, which act at the ſame time on the vessel, and on the piece of wood or *log* which sailors throw into the sea, considering it as a fixed point, and reckon how far they recede from it in a given time, usually half a minute a rope divided into knots, the distance of which is the hundred and twentieth part of a nautical mile, because half a minute is the hundred and twentieth part of an hour, as used for this purpose.

But if the vessel and the piece of wood are both acted on by the same current, the distance of the ship from the log will only shew the relative velocity of the ship with regard to the current, and the velocity which this current impresses at the same time on the vessel and the log, still remains to be determined. It is partly from thence that the difference, which is often very considerable, arises between the situation of the ship, as estimated by the pilot, and that where she really is.

From thence also it happens that the countries discovered by Magellan, Mendana, and Quiros, have been so ill defined with regard to their longitude, that it was with difficulty that they were again found. The Salomon islands, remarkable from their extent, and the circumſtantial description of them left us by Mendana who discovered them, have varied in situation almost through the circumference of the globe. None of the navigators who took this route after him, beginning with Quiros who had accompanied him, and who followed him immediately, could find them. At length their existence even became doubtful, but M. Buache has at length proved that they were the Terra des Arsacides and the adjacent islands diſcovered by M. M. de Bougainville and de Surville.

Their latitude was found to be correct, but the currents that run from east to west in the Southern ocean had very much increased the distance traversed by Mendana, of which he was not conscious; so that he imagined himself to be 1500 Spanish leagues, or 1700 French nautical leagues from the coast of Peru, when he was in reality 2400 leagues.

The voyages round the world, particularly those of late years, in which the frequent observation of the longitude has enabled the navigators to make a comparison between several correct points of the course and those obtained by estimation, have procured many very important data concerning the velocity of currents in different parts of the ocean.

These data are collected and carefully discussed in the *Voyage du Capitaine Marchand*, published by M. de Fleurieu.

The same work contains an hydrographical nomenclature of seas, gulphs, bays, &c. which it would be very convenient to adopt in geography and in charts.

95. When a result has been adopted for the value of the distances in a strait line, the application of the process described in (No. 92.) will almost always suffice to construct the geometrical plan, from the data deduced from historical or itinerary narrative; for these distances can only be correct in proportion as they are small, in which case the projection (No. 78.) may be neglected; and when they are large their uncertainty often surpasses the reductions which the laws of projection require, which therefore may be always omitted in the construction of this species of chart, recollecting, however, to take them into consideration when these materials (No. 81.) are applied to geographichal charts, subject to astronomical projections and observations.

By the perusal of what has preceded we may judge of the extent and variety of knowledge which a geographer should possess, of the course of reading which he should assiduously pursue, the notes which he should collect, and moreover discuss and class according to the rules of sound criticism.

I have been obliged in an introduction to confine myself to general ideas on the subject, and to refer for particular examples to individual treatises. It is in the writings of Delisle, D'Anville, of Buache, and of Gosselin, that the elements requisite for geographical combination must be sought.

At the end of the voyage in the interior of Africa by Mungo Park, we find notes by the learned Major Rennell, which present a collection of discussions, as well adapted to render intelligible the nature and object of critical geography, as they are important in defining the state of our knowledge of the interior of Africa.

96. Having briefly exposed the principles of the construction of charts, it remains to speak of their uses.

Of these the greater part are obvious, or only require the knowledge of a few marks easily recognized, and which formerly were explained in a reference placed at one side of the the map.

These signs mark the situations of places, and are modified according to the importance of the places, and the rank which they hold in the civil, military, or ecclesiastical government of the country.

The very small circle which is adjacent or attached to each of these signs, must always be observed, because it is the centre of this circle which marks the position of the place.

By taking its distance from the nearest parallel of latitude in the direction of the meridian, and measuring this distance on the graduated meridian, we get the latitude of the place; its longitude is obtained by the measure of its distance from the nearest meridian, taken in the direction of the parallel.

These operations require a little attention in charts, where the meridians are not parallel strait lines.

The graduations marked on the edge of the chart being then oblique with regard to the meridians and the parallels, the distances taken as described and referred to these graduations, will not give exactly the differences of latitude and longitude between the place required and the nearest parallel or meridian.

In this case it is requisite, either to find the proportion between these distances, and those of the parallels and meridians on the map, or else to draw the parallel and

and meridian which passes through the place required, and prolong them to the edges of the chart.

This latter operation is very easy on the conical projection relative to the meridians which are strait lines; and the parallels, which are concentric circles, may be also drawn by following the nearest with one point of a compass, whose opening is equal to the difference of latitude. It is not necessary to observe, that the distance of the two places ought to be measured from the centre of the little circle which indicates their position; but it should be remarked, that when the itinerary distance is required, and the roads are marked, the length of these lines ought to be measured, by taking between the compasses every individual length of the parts included between the turns of the road.

When the map admits of sufficient detail, the plan of the cities is a little extended, and the principal points of them are marked; and it must then be indicated to which of these points the geographical position refers.

97. A simple line marks the course of small rivers; and the two banks are marked separate, when the size of the river is sufficient to admit of its being estimated on the scale of the map, which happens most frequently at their mouths.

The shores of the sea are marked by a very fine line, edged with cross shading.

In geographical charts these shades are exterior with regard to the land, and seem to indicate the undulations of the sea on the coasts; while in nautical charts the shades are turned towards the land, as indicating the steepness of the coasts.

Navigable canals are represented by broken lines, to distinguish them from natural water courses, which are represented by undulating or waved lines.

High roads are often distinguished by fine double lines running parallel to each other, and sometimes by single lines, either continued or dotted, though these last are usually reserved to distinguish the boundaries of different states, kingdoms, and provinces, the magnitude and distance of these points being varied accordingly.

Maps are rendered still more intelligible by being coloured. In some countries, particularly in Germany, the same colour is spread over the whole surface of the country which is to be distinguished from the others; this mode of colouring is perhaps less beautiful than that used in France, but it has the advantage of rendering the size of the country, and form of its boundaries, more obvious.

In measuring the extent of a country, two cases are to be distinguished; that in which the projection of the chart represents, by equal surfaces, regions of equal extent upon the earth; in this case their area is measured like that of plane figures, by inscribing rectangles on the space contained within their boundaries; or by reducing them, at least by approximation, to regular figures.

In the other case the superficies must be divided into quadrilateral figures, formed by the parallels and meridians taken sufficiently near to each other, as has been described in (No. 50.) speaking of the globe, and the areas of these quadrilateral figures must be measured according to the process described in that number.

98. Maps of the world may serve for the same purposes as general charts; and those which are projected on the plane of the horizon may besides be employed for the solution of the questions described in (Nos. 54. and 55.) The difference of longitude contained between two meridians which terminate in the same parallel, being converted into time at the rate of one hour to 15 degrees, gives the time which a celestial body, corresponding to the proposed parallel, remains above the horizon, and consequently gives the length of the day, when those parallels are taken, on which the sun travels from one solstice to the other.

If, for the plane of projection or horizon, a circle of illumination be taken; that, for example, which corresponds to our summer solstice, and which is confounded with the horizon in the latitude 66° 32′, the map which will result indicates the duration of the day for all the latitudes, by converting into time the difference of longitude of the meridians which terminate these parallels of latitude in each hemisphere.

In general we may, by projections on the different circles of the sphere, resolve the same questions as by means of a globe; and for this purpose, charts have been drawn, to which, on account of their properties, the name of *planispheres* have been given. Father Chrysologue of Goy has published maps of the world on the horizon of Paris, carefully constructed, conveniently mounted, and adapted to solve many problems, both astronomical and geographical, explained in a pamphlet which accompanies the maps. The same author has brought this work to perfection, and has constructed new planispheres on a much larger scale.

99. It is not sufficient to represent in charts the situation of places, the connections of countries, their extent, their divisions, and their boundaries, circumstances which belong to mathematical and political geography; it is likewise required to know the form of the terrestrial surface in these regions, that which is called the *face of the country*; that is to say whether it is flat or mountainous, open or wooded, dry or marshy. Engravers have devised means, sometimes picturesque, sometimes arbitrary, to express upon trigonometrical surveys and topographical charts, these different circumstances which, combined with the climate, and the meteorological phenomena of each country, constitute its physical geography. It is sufficient to look at a map of this kind to recollect the signs which are employed, and to observe that the parts, more or less strongly shaded, represent declivities more or less steep, on which the light loses itself in proportion as they are more perpendicular.

The designs of geographical charts have been very much behind those for topographical purposes, particularly with regard to the mountains; because the extent of the forests being considerably diminished in civilized countries, they have nearly disappeared from all maps; but the inequalities of the ground, from the most lofty chains of mountains, to hills of the lowest order, should be expressed in a manner corresponding to all the other geographical circumstances, and consequently should have a place in the details proportionate to their size.

Peaks, or insulated points, in general, rest upon elevations more or less considerable; but the extent of which gives the outlines which determine the form of the

the vallies, like the sinuosities of the coasts, which are, with regard to the sea, like the hollows of mountains.

It may be perceived by these remarks how vague and insignificant are those insulated points which mark the mountains on the majority of maps. We see nothing but that the country they occupy is mountainous, and it would be as well to write *here are mountains;* nothing indicates the course of their chains, their various depressions, and their connections either with each other, or with the islands formed by the summits of the chains of submarine mountains.

Philippe Buache is the first who has attached himself especially to physical geography, and who has given a precise idea of the branches of the different chains of mountains on the earth connected with the inequalities of the bottom, of the depth of the sea, by means of *soundings* marked on nautical charts. He constructed, with great care, a globe, on which these forms were expressed in relief, certainly in an exaggerated manner with respect to the diameter of the globe, because, without this, it is impossible to render them perceptible (N° 42.) In the charts which he composed on this subject, he indicated the chains of mountains by the outline of their summits, to which he joined profiles or sections, following given lines, on which he constructed, from a convenient scale, the heights of different points of the terrestrial surface. He traced with particular care, in 1736, a section following the line which passes from cape Tagrin to Rio Grande, in which direction Africa and America approach the nearest to each other, and which passes near the islands situated in the middle of the great ocean which separates these two continents.

Several authors, taking advantage of this original idea, and assisted by new information acquired on this subject, have published maps of the world, and charts which may be consulted with great propriety to acquire a knowledge of the great inequalities of the terrestrial surface; but precise means are yet wanting to represent them, and to render their respective altitudes obvious.

100. Profiles leave nothing to be desired with respect to precision; but it is scarcely possible to multiply them sufficiently to give in every direction the form of every part of the surface of the earth.

It is obvious, that if upon a nautical chart all the points where the soundings are equal be connected by a line, the form of this line will be that of a section made at the bottom of the sea, by a horizontal plane, depressed below the surface of the fluid, by a quantity equal to the number of the measures or fathoms contained in the sounding. M. Dussain Triel has devised a method as ingenious as satisfactory, to represent geometrically the form of the surface of a country. This method consists in tracing on the map to be constructed lines which pass through points at the same level or altitude above the surface of the sea; lines which would successively become banks, if the sea could, by any cause whatever, be raised to that altitude: as the lines which join the equal soundings would become banks, if it could be sunk to the number of fathoms expressed in the soundings.

The heights of these lines, or horizontal sections, are graduated according to the scale of the map, and the steepness of their declivities. Upon a *projet* of a map of France which he has published, M. Dussain Triel has drawn, in the level countries and near the sea-coast, a line which passes through the points which have ten toises of altitude; then that which passes through twenty, and so on successively through every ten toises. These lines, at first thinly scattered, become closer as the country rises more rapidly. Near insulated mountains these lines, which are only marked at the distances of 50 or 100 toises, approach each other according as the inclinations are more or less steep; this may be easily conceived, by observing that the lines traced on the map are the projections of lines on the same level, drawn on the terrestrial surface, and that they ought to be thicker on the mountains for the same reason that the spaces are contracted on the edges of a map projected orthographically. (N° 65.)

It is also obvious that the *Plateaux* are remarkable for the level lines which surround them, and which mark the outline of their boundaries.

Finally, if we imagine other lines to intersect the horizontal lines at right angles, these will be the *lines of the greatest inclination*, or those which follow the course of the waters running over the sides of the mountains.

If horizontal lines were always traced on maps, besides the advantage of adopting the methods of the *geometry of planes and surfaces* (*descriptive geometry*) for the resolution of problems, on the intersection of horizontal and inclined planes, very important in the construction of roads and canals; they would be the means of collecting and bringing forward to the world a number of surveys and observations made by civil and military ingineers on the heights of mountains, and the results of which are buried with the government plans; and the advantage which might be derived from them would excite travellers and men of science residing in great cities to multiply those barometrical observations which give the respective altitudes of the places where they are made *.

It is not necessary to have corresponding observations at every station; it is sufficient to procure such a number of observations as will enable us to deduce the mean height of the barometer in that place with certainty. The comparison of the mean heights peculiar to the different stations enables us to ascertain the different altitudes of these stations. This method, which would not be sufficiently exact if it was requisite to compare stations but little elevated above each other, and not far distant, becomes very important with regard to points too far distant to admit of their being trigonometrical operations.

It has been objected, it is true, against the construction of horizontal lines upon charts, that they render them confused; but this inconvenience, however serious it may be, cannot be compared with the utility of the objects described above; besides, it may be partly remedied by distinguishing with a particular colour the horizontal lines.

* The Abbe Chappe surveyed, in this manner, in 1761, the road from Breſt to Tobolſk, and gave the reſults in the narrative of his journey.

I ſhall

I shall observe on this subject, that even topographical objects, where they are strongly expressed by the graver, do not allow of many places being designated on one map, and compel us to adopt a larger scale. However, if it cannot be otherwise contrived, each country may be represented by two charts on the same plan; one containing the detail of the places: the other, only including the most remarkable points, might contain the horizontal lines.

101. When the last mentioned charts cannot be obtained, it is possible, by an examination of the course of the water and its branches, to deduce some general indications of the form of the ground in the different countries of the globe.

The water which falls from the sides of mountains and hills, collecting itself in torrents and rivers, either immediately, or after having penetrated into the interior of the earth, as far as the clayey stratum which stops its progress, traces upon the terrestrial surface the *lines of the greatest inclination*, which approach nearer to the level of the sea in proportion as the course of the water is prolonged.

The course of the principal rivers on a map, indicates the lower part of the most considerable vallies. These vallies are bounded by high lands, which are again intersected by secondary vallies, through which run those rivers which empty themselves into the first.

In the same manner other smaller vallies are distinguished by still less considerable rivers; so that the whole course of water forms a sort of net-work, of which the threads intersect at very obtuse angles.

If we ascend as far as the source of the largest rivers, and to that of their secondary rivers which join them near their source, we shall generally arrive at the most elevated points. We may deduce, therefore, with a very few exceptions, the steepness of a declivity from the greater or less degree of curvature in the bed of the river; but that which is more particularly worthy of attention, are those parts where the water divides itself into opposite directions, and runs into different seas or lakes. It is there that the *points of division* are found, the determination of which is the principal basis of the construction of navigable canals, intended to connect one sea with another. It was by discovering with great sagacity, by the inspection only of the form of the Black mountain, the point of separation of its streams towards the ocean and towards the Mediterranean, that Francis Andreossy conceived the plan and the possibility of executing a canal towards the south, the finest work of this description that has ever been attempted. His great grandson, Andreossy, the general of artillery, was the first to develope, in his interesting history of the same canal, the considerations which ought to serve as a guide, in a survey intended to discover the points of separation and re-union of the streams intended to fill a canal.

Two engineers of bridges and high roads, M. Dupuy and M. Brisson, have also, in a very ingenious manner, referred the characters, indicative of these circumstances, to the forms of geometrical surfaces. Their memoir, presented to the Institute, will no doubt be very soon printed.

102. To particularize the summary ideas which I have just presented, I shall now point out their application.

At the first glance over a general map of Asia, it must be observed that the great rivers which terminate in the Indian, the Chinese, and the Northern seas, rise in Thibet and to the north of the country of the Eleutheri, from which it appears that these countries are surrounded with very high mountains, and here is found the highest plain in Asia, which is the base of these mountains. From this plain three declivities are directed towards each of the above mentioned seas; these declivities are intersected by the branches of the mountains in which the auxiliary streams of these rivers have their source.

Even if the mountains of Kamenoïpayas, which separate Russia in Europe from Russia in Asia, were not marked upon the map, the almost opposite direction of the Oby and Peezara, and that of the rivers which fall into the Northern ocean to the west of the strait of Waygats, and into the White sea, would indicate them.

In the same manner, we observe an elevated plain between the Black sea, the Caspian, the Mediterranean, and the Persian gulf. The Caspian sea, the lake of Aral in Asia, and that lake where the Niger loses itself in Africa, are, on the contrary, the low parts where those declivities meet on which the rivers flow that descend along their sides.

103. Having explained the astronomical methods for the determination of places distant from each other, and the means of delineating these places either by the construction of globes or maps; and alſo shewn how these maps should be filled up, by the combination of trigonometrical plans, with the narratives of travellers or historians, the use that may be made of these various representations, and the conclusions that may be drawn from them relative to the inequalities of the surface of the earth, I have fulfilled the object which I proposed to myself in this Introduction. It only contains, in fact, the rudiments of the important subjects which I have treated; but it is the first time that they have been collected and methodically arranged. I therefore flatter myself that I have some claim to the indulgence of the reader, who being put into the proper road to purſue this ſtudy, cannot fail of finding ſources from which he may obtain more detailed information. The original works are well known: the improvement which geography has received from the meaſure of the arc of the meridian; from the great military operations, and from the recent labours of government, are continually improving these methods, and obtaining more satisfactory results *.

* The topographical and military memorial, abridged for the war department, presents a methodical exposition. There is also in Germany a journal devoted to geography, conducted by M. de Zach.

TABLES relating to the Magnitude and Figure of the Earth.

TABLE I.

A Table of the Meridional Degrees of the Terrestrial Spheroid calculated to every Degree of Latitude.

Lat. of the middle Point.	English Feet.	Diff.	Lat. of the middle Point.	English Feet.	Diff.	Lat. of the middle Point.	English Feet.	Diff.	Lat. of the middle point.	English Feet.	Diff.
0	362909	1	23	363410	41	46	364604	58	69	365761	38
1	362910	3	24	363451	43	47	364662	57	70	365799	37
2	362913	5	25	363494	44	48	364720	57	71	365836	35
3	362918	7	26	363538	45	49	264777	57	72	365871	33
4	362925	9	27	363583	46	50	364834	57	73	365904	31
5	362934	11	28	363629	47	51	364891	57	74	365935	30
6	362945	13	29	363676	48	52	364948	56	75	365965	28
7	362958	15	30	363724	49	53	365004	55	76	365993	26
8	362973	16	31	363773	50	54	365059	54	77	366019	24
9	362989	18	32	363823	51	55	365113	53	78	366043	22
10	363007	20	33	363874	52	56	365160	52	79	366065	20
11	363027	22	34	363926	53	57	365218	51	80	366084	18
12	363049	24	35	363979	54	58	365269	50	81	366102	16
13	363073	26	36	364033	55	59	365319	49	82	366118	15
14	363099	28	37	364088	56	60	365368	48	83	366133	13
15	363127	30	38	364144	57	61	365416	47	84	366146	11
16	363157	32	39	364201	57	62	365463	46	85	366159	9
17	363189	34	40	364258	57	63	365509	45	86	366168	7
18	363223	35	41	364315	57	64	365554	44	87	366175	5
19	363258	37	42	364372	57	65	365598	43	88	366180	3
20	363295	38	43	364430	58	66	365641	41	89	366183	1
21	363333	39	44	364488	58	67	365682	40	90	366184	
22	363370	40	45	364546	58	68	365722	39			
23	363410		46	364604		69	365761				

In the above Table, the ellipticity is supposed $\frac{1}{3\,0\,4}$, the degree at the equator, and at 45° taken from actual measurement; and the other, degrees calculated according to the rules explained in the text.

TABLE II.

A Table of Perpendicular Degrees on the Spheroid calculated to every Degree of the Meridian in English Feet, (ellipticity = $\frac{1}{314}$).

Lat.	Perp. Deg.	Diff.	Lat.	Perp. Deg.	Diff.	Lat.	Perp. Deg.	Diff.	Lat.	Perp. Deg.	Diff.
0	365094	1	23	365257	12	46	365660	19	69	366047	11
1	365095	2	24	365269	13	47	365679	19	70	366058	11
2	365097	2	25	365282	14	48	365698	19	71	366069	10
3	365099	3	26	365296	15	49	365717	19	72	366079	10
4	365102	4	27	365311	16	50	365736	19	73	366089	10
5	365106	4	28	365327	16	51	365755	19	74	366099	9
6	365110	5	29	365343	17	52	365774	19	75	366108	9
7	365115	5	30	365360	17	53	365793	19	76	366117	9
8	365120	5	31	365377	18	54	365812	19	77	366126	8
9	365125	6	32	365395	18	55	365831	18	78	366134	7
10	365131	7	33	365413	18	56	365849	18	79	366141	7
11	365138	8	34	365431	18	57	355867	18	80	366148	6
12	365146	8	35	365449	19	58	365885	18	81	366154	5
13	365156	9	36	365468	19	59	365903	17	82	366159	5
14	365163	9	37	365487	19	60	365920	17	83	366164	4
15	365172	9	38	365506	19	61	365937	16	84	366168	4
16	365181	10	39	365525	19	62	365953	16	85	366172	4
17	365191	10	40	365544	19	63	365969	15	86	366176	3
18	365201	10	41	365563	19	64	365984	14	87	366179	2
19	365211	11	42	365582	19	65	365998	13	88	366181	2
20	365222	11	43	365601	19	66	366011	12	89	366183	1
21	365233	12	44	365620	19	67	366023	12	90	366184	
22	365245	12	45	365640	19	68	366035	12			
23	365257		46	365660		69	366047				

TABLE III.

Table of the Degrees of Longitude on the Spheroid; to every Degree of latitude, computed in Fathoms, the ellipticity being supposed $\frac{1}{334}$.

Lat.	Degrees of Longitude	Diff.	2d Diff.	Lat.	Degrees of Longitude.	Diff.	2d Diff.	Lat.	Degrees of Longitude.	Diff.	2d Diff.
	Fathoms.				Fathoms.				Fathoms.		
0	60849			31	52198			62	28634		
		9				552				943	
1	60840		19	32	51646		16	63	27691		9
		28				568				952	
2	60812		18	33	51078		16	64	26738		8
		46				584				960	
3	60766		18	34	50494		16	65	25778		8
		64				600				968	
4	60702		19	35	49894		15	66	24810		8
		83				615				976	
5	60619		18	36	49279		15	67	23835		7
		101				630				983	
6	60518		18	37	48649		15	68	22852		7
		119				645				990	
7	60899		19	38	48004		15	69	21863		7
		138				660				997	
8	60261		18	39	47344		14	70	20866		6
		156				674				1003	
9	60105		18	40	46670		14	71	19863		6
		174				688				1009	
10	59931		18	41	45982		14	72	18854		6
		192				702				1015	
11	59738		18	42	45280		14	73	17839		6
		210				716				1021	
12	59527		18	43	44564		14	74	16818		5
		228				730				1026	
13	59299		18	44	43834		13	75	15792		4
		246				743				1030	
14	59053		18	45	43091		13	76	14762		5
		264				756				1035	
15	58789		18	46	42235		13	77	13727		5
		282				769				1040	
16	58507		18	47	41566		13	78	12687		4
		300				782				1044	
17	58207		18	48	40784		13	79	11643		3
		318				795				1047	
18	57890		18	49	39989		13	80	10596		3
		336				808				1050	
19	57554		18	50	39181		11	81	9546		3
		354				220				1053	
20	57209		18	51	38361		11	82	8493		3
		372				231				1056	
21	56828		18	52	37530		11	83	7437		2
		390				842				1058	
22	56438		17	53	36688		11	84	6379		2
		407				853				1060	
23	56031		16	54	35835		11	85	5319		2
		423				864				1062	
24	55608		16	55	34971		11	86	4257		1
		489				175				1063	
25	55169		16	56	34096		11	87	3194		1
		455				886				1064	
26	54714		16	57	33211		10	88	2130		1
		471				896				1065	
27	54243		16	58	32315		10	89	1065		0
		487				906				1065	
28	53756		16	59	31409		10	90	0000		
		503				916					
29	53253		16	60	30493		9				
		519				925					
30	52734		16	61	29568		9				
		536				939					
31	52198			62	28634						

TABLE IV.

Table of Degrees of Longitude on the Sphere to every Degree of Latitude.

Lat.	Fathoms.	Diff.	2d Diff.	Lat.	Fathoms.	Diff.	2d Diff.	Lat.	Fathoms.	Diff.	2nd Diff.
0	60758			31	52080			62	28524		
		9				554				940	
1	60749		19	32	51526		16	63	27584		9
		28				570				949	
2	60721		19	33	50956		15	64	26635		9
		47				585				958	
3	60674		18	34	50371		16	65	25677		7
		65				601				965	
4	60610		18	35	49770		15	66	24712		7
		83				616				972	
5	60527		19	36	49154		15	67	23740		7
		102				631				979	
6	60425		18	37	48523		15	68	22760		7
		120				646				986	
7	60305		19	38	47878		14	69	21774		7
		139				660				993	
8	60166		17	39	47218		15	70	20781		6
		156				675				999	
9	60010		19	40	46543		13	71	19782		6
		175				688				1005	
10	59835		18	41	45855		15	72	18777		6
		193				703				1011	
11	59642		19	42	45152		13	73	17766		6
		212				716				1017	
12	59430		17	43	44436		14	74	16749		5
		229				730				1022	
13	59201		19	44	43706		14	75	15727		5
		248				744				1027	
14	58953		18	45	42962		12	76	14700		5
		265				756				1032	
15	58688		19	46	42206		13	77	13668		4
		284				769				1006	
16	58404		17	47	41437		13	78	12633		4
		301				782				1040	
17	58103		18	48	40655		12	79	11593		3
		319				794				1043	
18	57784		18	49	39861		12	80	10550		3
		337				806				1046	
19	57447		17	50	39054		12	81	9505		3
		354				818				1049	
20	57093		17	51	39236		12	82	8456		3
		371				830				1052	
21	56722		17	52	37406		11	83	7404		2
		388				841				1054	
22	56334		18	53	36565		11	84	6351		2
		406				852				1056	
23	55928		17	54	35713		12	85	5295		1
		423				864				1057	
24	55505		17	55	34849		10	86	4238		1
		440				874				1058	
25	55065		16	56	33975		10	87	3180		1
		456				884				1059	
26	54609		17	57	33091		10	88	2121		1
		473				894				1060	
27	54136		17	58	32197		10	89	1060		0
		490				904				1060	
28	53646		16	59	31293		10	90	0000		
		506				914					
29	53140		16	60	30379		9				
		522				923					
30	52618		16	61	29456		9				
		538				932					
31	52080			62	28524						

TABLE V.

Table of Decimal Degrees of Longitude on a Sphere.

Latitude in Decimal Degrees.	Degrees of Longitude.	Latitude in Decimal Degreees.	Degrees of Longitude.	Latitude in Decimal Degrees.	Degrees of Longitude.
	Kiliometres.		Kiliometres.		Kiliometres.
0	100,000	34	86,074	68	48,175
1	99,988	35	85,264	69	46,793
2	99,951	36	84,433	70	45,399
3	99,889	37	83,581	71	43,994
4	99,803	38	82,708	72	42,578
5	99,692	39	81,815	73	41,151
6	99,556	40	80,902	74	39,115
7	99,396	41	79,968	75	38,268
8	99,211	42	79,015	76	36,812
9	99,002	43	78,043	77	35,347
10	98,769	44	77,051	78	33,874
11	98,511	45	76,040	79	32,392
12	98,229	46	75,011	80	30,902
13	97,922	47	73,963	81	29,404
14	97,592	48	72,897	82	27,899
15	97,237	49	71,813	83	26,387
16	96,858	50	70,711	84	24,869
17	96,456	51	69,591	85	23,344
18	96,029	52	68,455	86	21,814
19	95,579	53	67,301	87	20,279
20	95,106	54	66,131	88	18,738
21	94,608	55	64,945	89	17,193
22	94,588	56	63,742	90	15,643
23	94,544	57	62,524	91	14,090
24	92,978	58	61,291	92	12,533
25	92,388	59	60,042	93	10,973
26	91,775	60	58,778	94	9,411
27	91,140	61	57,500	95	7,846
28	90,483	62	56,208	96	6,279
29	89,803	63	54,902	97	4,711
30	89,101	64	53,583	98	3,141
31	88,377	65	52,250	99	1,571
32	87,631	66	50,904	100	0,000
33	86,863	67	49,546		

TABLE VI.

Of Decimal Degrees of Latitude, the Ellipticity being supposed $\frac{1}{336}$.

Lat.	Degrees of Latitude.	Differ.	Lat.	Degrees of Latitude.	Differ.	Lat.	Degrees of Latitude.	Differ.
G.	Metres.	M.	G.	Metres	M.	G.	Metres.	M.
0	99552.5	0.4	35	99802.2	12.7	70	100269.0	11.2
1	99552.9	0.9	36	99814.9	12.9	71	100280.2	10.9
2	99553.8	1.3	37	99827.8	13.1	72	100291.1	10.6
3	99555.1	1.8	38	99840.9	13.2	73	100301.7	10.3
4	99556.9	2.1	39	99854.1	13.4	74	100312.0	10.0
5	99559.0	2.8	40	99867.5	13.5	75	100322.0	9.7
6	99561.8	3.0	41	99881.0	13.6	76	100331.7	9.4
7	99564.7	3.5	42	99894.6	13.7	77	100341.1	9.0
8	99568.2	3.9	43	99908.3	13.8	78	100350.1	8.7
9	99572.1	4.3	44	99922.1	13.9	79	100358.8	8.4
10	99576.4	4.8	45	99936.0	13.9	80	100367.2	7.9
11	99581.2	5.1	46	99950.0	14.0	81	100375.1	7.6
12	99586.3	5.6	47	99964.0	14.0	82	100382.7	7.2
13	99591.8	5.9	48	99978.0	14.1	83	100389.9	6.9
14	99597.8	6.4	49	99992.1	14.1	84	100396.8	6.4
15	99604.2	6.7	50	100006.2	14.1	85	100403.2	6.1
16	99610.9	7.1	51	100020.3	14.1	86	100409.3	5.6
17	99618.0	7.4	52	100034.4	14.0	87	100414.9	5.2
18	99625.4	8.0	53	100048.4	14.0	88	100420.1	4.8
19	99633.4	8.2	54	100062.4	13.9	89	100424.9	4.4
20	99641.6	8.6	55	100076.3	13.9	90	100429.3	3.9
21	99650.2	8.9	56	100090.2	13.7	91	100433.2	3.6
22	99659.1	9.3	57	100103.9	13.7	92	100436.8	3.1
23	99668.4	9.6	58	100117.6	13.6	93	100439.9	2.6
24	99678.0	9.9	59	100131.2	13.4	94	100442.5	2.2
25	99687.9	10.2	60	100144.6	13.3	95	100444.7	1.8
26	99698.1	10.5	61	100157.9	13.1	96	100446.5	1.3
27	99708.6	10.8	62	100171.0	13.0	97	100447.8	0.9
28	99719.4	11.1	63	100184.0	12.8	98	100448.7	0.4
29	99730.5	11.4	64	100196.8	12.6	99	100449.2	
30	99741.9	11.6	65	100209.4	12.3	100		
31	99753.5	11.8	66	100221.7	12.2			
32	99765.3	12.1	67	100233.9	12.0			
33	99777.4	12.3	68	100245.9	11.7			
34	99789.7	12.5	69	100257.5	11.5			
35	99802.2		70	100269.0				

TABLE VII.

Of Decimal Degrees of Longitude, the Ellipticity being fuppofed $\frac{1}{333}$.

Lat.	Degrees of Longitude.	Differ.	Lat.	Degrees of Longitude.	Differ.	Lat.	Degrees of Longitude.	Differ.
G.	Metres.	M.	G.	Metres.	M.	G.	Metres.	M.
0	100149.4	12.3	35	85461.0	829.6	70	45574.8	1408.9
1	100137.1	36.8	36	84631.4	850.5	71	44165.9	1419.9
2	100100.3	61.4	37	83780.6	871.2	72	42746.0	1430.7
3	100038.9	85.9	38	82909.7	891.6	73	41315.3	1440.9
4	99953.0	110.5	39	82018.1	911.9	74	39874.4	1451.0
5	99842.5	134.9	40	81106.2	932.1	75	38423.4	1460.6
6	99707.6	159.4	41	80174.1	951.8	76	36962.8	1469.8
7	99548.2	183.9	42	79222.3	971.4	77	35493.0	1478.8
8	99364.3	208.1	43	78250.9	990.8	78	34014.2	1487.2
9	99156.2	232.6	44	77260.1	1010.0	79	32527.0	1495.4
10	98923.6	256.8	45	76250.1	1028.8	80	31031.6	1508.1
11	98666.8	281.0	46	75221.3	1047.5	81	29528.5	1510.6
12	98385.8	305.2	47	74173.8	1065.8	82	28017.9	1517.6
13	98080.6	329.3	48	73108.0	1084.0	83	26500.3	1524.2
14	97751.3	358.2	49	72024.0	1101.9	84	24976.1	1530.5
15	97398.1	377.2	50	70922.1	1119.5	85	23445.6	1536.4
16	97020.9	401.0	51	69802.6	1136.8	86	21909.2	1541.9
17	96616.9	424.8	52	68665.8	1153.7	87	20367.3	1547.0
18	96195.1	448.4	53	67512.0	1170.7	88	18820.3	1551.7
19	95746.8	471.9	54	66341.3	1187.1	89	17268.6	1556.0
20	95274.9	495.3	55	65154.2	1203.3	90	15712.6	1560.0
21	94779.6	518.7	56	63950.9	1219.2	91	14152.6	1563.6
22	94260.9	541.8	57	62731.7	1234.9	92	12589.0	1566.7
23	93719.1	564.9	58	61496.8	1250.1	93	11022.3	1569.4
24	93154.2	587.8	59	60246.7	1265.2	94	9452.9	1571.9
25	92566.4	610.6	60	58981.5	1279.9	95	7881.0	1573.8
26	91955.8	633.2	61	57701.6	1294.2	96	6307.2	1575.4
27	91322.6	655.7	62	56407.4	1308.3	97	4731.8	1576.1
28	90666.9	678.0	63	55099.1	1322.0	98	3155.7	1577.9
29	89988.9	700.3	64	53777.1	1335.4	99	1577.8	1577.8
30	89288.6	722.2	65	52441.7	1348.6	100	0.0	
31	88566.4	744.0	66	51093.1	1361.3			
32	87822.4	765 7	67	49731.8	1373.6			
33	87056.7	787.2	68	48358.3	1385.8			
34	86269.5	808.5	69	46972.4	1397.6			
35	85461.0		70	45574.8				

NEW FRENCH MEASURES.

	English Inches.
Millimetre - - - -	,03937
Centimetre - - - -	,39371
Decimetre - - - -	3,93710
Metre - 3,281 - -	39,37100
Decametre - - - -	393,71000
Hecatometre - - - -	3937,10000
Chiliometre - - - -	39371,00000
Myriometre - - - -	393710,00000

A metre is 1,09364 yards, or nearly one yard 1½ nail, or 443,2959 lines Fr., or ,513074 toises.
A Decametre is 10 yards, 2 feet, 9,7 inches.
A Hecatometre is 109 yards, 1 foot, 1 inch.
A Chiliometre 4 furlongs, 213 yards, 1 foot, 1 inch.
A Micrometre, 6 miles, 1 furlong, 156 yards, 0 feet, 6 inches.
Eight Chiliometres are nearly five miles.
An Inch is ,0254 miles, 2441 inches, 62 metres, 1000 feet, nearly 305 metres.
An Are, a square decametre, is 3,95 perches, E.
A Hecatare, 2 acres, 1 rood, 35,4 perches.

	Cubic Inches.
Millilitre - - - -	,06103
Centilitre - - - -	,61028
Decilitre - - - -	6,10380
Litre, a Cubic Decimitre - -	61,02800
Decalitre - - - -	610,28000
Hecatolitre - - - -	6102,80000
Chiliolitre - - - -	61028,00000
Myriolitre - - - -	610280,00000

A Litre is nearly 2⅛ wine pints; 14 Decilitres are nearly 3 wine pints; a Chiliolitre is 1 tun, 12,75 wine gallons.
A Decistere for firewood is 3,5317 cubic feet E.
A Stere a cubic measure.

A

TABLE

OF THE

LATITUDES and LONGITUDES

OF THE

PRINCIPAL PLACES ON THE EARTH'S SURFACE.

A.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Abbeville	Eur.	France	50 7 4 N	1 49 43 E	0 7 19 E	
Abo	Eur.	Finland	60 27 10 N	22 13 30 E	1 28 54 E	
Achem	Asia	Sumatra	5 22 0 N	95 34 0 E	6 22 16 E	
Adventure (Bay)	Asia	New Holland	43 23 0 S	147 30 0 E	9 50 0 E	
Adventure (Isle)	Asia	Pacific Ocean	17 5 15 S	144 17 45 W	9 37 11 W	
Agde	Eur.	France	43 18 43 N	3 27 55 E	0 13 52 E	
Agen	Eur.	France	44 12 22 N	0 36 20 E	0 2 25 E	
St. Agnes (Lights)	Eur.	Scillies	49 56 0 N	6 46 0 W	0 27 4 W	
Agra	Asia	India	26 43 0 N	76 44 0 E	5 6 56 E	
Aire	Eur.	France	43 41 52 N	4 55 51 E	0 19 43 E	
Aix	Eur.	France	43 31 48 N	5 26 32 E	0 21 46 E	
Alby	Eur.	France	43 55 36 N	2 8 18 E	0 8 33 E	
Aleppo	Asia	Turkey	35 11 25 N	37 10 0 E	2 28 40 E	
Alexandretta	Asia	Syria	36 35 27 N	36 15 0 E	2 25 0 E	
Alexandria	Africa	Egypt	31 11 28 N	30 10 22 E	2 0 41 E	
Algiers	Africa	Algiers	36 49 30 N	2 12 45 E	0 8 51 E	
Amboise	Eur.	France	47 24 54 N	0 59 7 W	0 3 56 W	
Ambrym (Isle)	Asia	Pacific Ocean	16 9 30 S	168 12 30 E	11 12 50 E	
Amiens	Eur.	France	49 53 43 N	2 17 56 E	0 9 12 E	
Amsterdam	Eur.	Holland	52 21 56 N	4 51 30 E	0 19 26 E	3 0
Amsterdam (Isle)	Asia	Pacific Ocean	21 9 0 S	174 46 0 W	11 39 4 W	8 30
Ancona	Eur.	Italy	43 37 54 N	13 28 52 E	0 53 56 E	
Angers	Eur.	France	47 28 9 N	0 33 15 W	0 2 13 W	
Angoulême	Eur.	France	45 38 57 N	0 9 15 E	0 0 26 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Angra	Eur.	Tercera	38 39 0 N	27 12 15 W	1 48 49 W	
Annamocka	Asia	Pacific Ocean	20 16 30 S	174 30 30 W	11 38 2 W	
St. Anthony's (Cape)	Amer.	Staten Land	54 46 45 S			
Antibes	Eur.	France	43 34 43 N	7 7 20 E	0 28 29 E	
Antigua (St. John's)	Amer.	Carib. Sea	17 4 30 N	62 9 0 W	4 8 36 W	
Antwerp	Eur.	Flanders	51 13 15 N	4 22 45 E	0 17 31 E	6 0
Apæ (Isle)	Asia	Pacific Ocean	16 46 15 S	168 27 30 E	11 13 50 E	
Aracta	Asia	Turkey	36 1 0 N	38 50 0 E	2 35 20 E	
Archangel	Eur.	Russia	64 33 36 N	38 59 15 E	2 35 57 E	6 0
Arica	Amer.	Peru	18 26 38 S	70 25 0 W	4 41 40 W	
Arles	Eur.	France	43 40 28 N	4 37 24 E	0 18 30 E	
Arras	Eur.	France	50 17 30 N	2 46 12 E	0 11 5 E	
Ascension (Isle)	Africa	S. Atl. Ocean	7 57 0 S	13 59 0 W	0 55 56 W	
Athens	Eur.	Turkey	38 5 0 N	23 52 30 E	1 35 30 E	
Auch	Eur.	France	43 38 39 N	0 34 56 E	0 2 18 E	
St. Augustin	Africa	Madagascar	23 35 29 S	43 8 0 E	2 52 32 E	
Aurillac	Eur.	France	44 55 10 N	2 27 0 W	0 9 48 W	
Aurora (Isle)	Asia	Pacific Ocean	15 8 0 S	168 17 0 E	11 13 8 E	
Autun	Eur.	France	46 56 48 N	4 17 44 E	0 17 11 E	
Auxerre	Eur.	France	47 47 57 N	3 34 6 E	0 14 16 E	
Auxonne	Eur.	France	47 11 24 N	5 23 35 E	0 21 34 E	
Avignon	Eur.	France	43 56 58 N	4 48 10 E	0 19 13 E	
Avranches	Eur.	France	48 41 21 N	1 21 51 W	0 5 27 W	

B.

Babelmondel Straits	Africa	Abyssinia	12 50 0 N	43 50 0 E	2 55 20 E	
Babylon (Ancient)	Asia	Mesopotamia	33 0 0 N	42 46 30 E	2 51 6 E	
Bagdad	Asia	Mesopotamia	33 19 40 N	44 24 30 E	2 57 38 E	
Balasore	Asia	India	21 20 0 N	86 0 0 E	5 44 0 E	
Balabea (Isle)	Asia	N. Caledonia	20 7 0 S	164 22 0 E	10 57 28 E	
Banguey (Peak)	Asia	Malacca	7 18 0 N	117 17 30 E	7 49 10 E	
Bantrey Bay	Eur.	Ireland	51 26 0 N	10 10 0 W	0 40 40 W	
Barbadoes, Bridge Town	Amer.	Atl. Ocean	13 0 0 N	59 50 0 W	3 59 20 W	
Barbas (Cape)	Africa	Sanhaga	22 15 30 N	16 40 0 W	1 6 40 W	
Barbuda (Isle)	Amer.	Atl. Ocean	17 49 45 N	61 50 0 W	4 7 20 W	
Barcelona	Eur.	Spain	41 23 0 N	2 13 0 E	0 8 52 E	
Barnevelt's (Isle)	Amer.	Terra del Fuego	55 49 0 S	66 58 0 W	4 27 52 W	
St. Bartholomew's (Isle)	Asia	N. Hebrides	15 42 0 S	167 17 30 E	11 9 10 E	
Basil	Eur.	Switzerland	47 35 0 N	7 29 30 E	0 29 58 E	
Bassa Terre	Amer.	Gaudaloupe	15 59 30 N	61 59 15 W	4 7 57 W	
Batavia	Asia	Java	6 12 0 S	106 53 46 E	7 7 35 E	
Bath	Eur.	England	51 22 30 N	2 21 30 W	0 9 26 W	
Bayeux	Eur.	France	49 16 34 N	0 42 11 W	0 2 49 W	
Bayonne	Eur.	France	43 29 15 N	1 28 41 W	0 5 55 W	3 30
Beachey Head	Eur.	England	50 44 30 N	0 19 40 E	0 1 19 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Bear (Isle)	Amer.	Hudson's Bay	54 34 0 N	79 56 0 W	5 19 44 W	12 0
Beauvois	Eur.	France	49 26 0 N	2 4 42 E	0 8 19 E	
Belle Isle	Eur.	France	47 17 17 N	3 5 0 W	0 12 20 W	2 30
Bembridge Point	Eur.	Isle of Wight	50 40 15 N	1 4 45 W	0 4 19 W	
Bencoolen	Asia	Sumatra	3 49 16 S	102 10 30 E	6 48 42 E	
Berlin	Eur.	Germany	52 31 30 N	13 22 0 E	0 53 28 E	
Bermudas (Isle)	Amer.	Atl. Ocean	32 35 0 N	63 28 0 W	4 13 52 W	7 0
Besanson	Eur.	France	47 14 12 N	6 2 46 E	0 24 11 E	
Beſiers	Eur.	France	43 20 23 N	3 12 24 E	0 12 50 E	
Blanco (Cape)	Africa	Negroland	20 55 30 N	17 10 0 W	1 8 40 W	9 45
Blanco (Cape)	Amer.	Patagonia	47 20 0 S	64 42 0 W	4 18 48 W	
Blois	Eur.	France	47 35 20 N	1 20 10 E	0 5 20 E	
Bojador (Cape)	Africa	Negroland	26 12 30 N	14 27 0 W	0 57 48 W	
Bolabola (Isle)	Asia	Pacif. Ocean	16 32 30 S	151 52 0 W	10 7 28 W	
Bologne	Eur.	France	50 43 33 N	1 36 33 E	0 6 26 E	10 30
Bologna	Eur.	Italy	44 29 36 N	11 21 15 E	0 45 25 E	
Bolschereskoi	Asia	Siberia	52 54 30 N	156 37 30 E	10 26 30 E	
Bombay	Asia	India	18 56 40 N	72 38 0 E	4 50 32 E	
Bonavista (Isle)	Africa	Atl. Ocean	16 6 0 N	22 47 15 W	1 31 9 W	
Boston	Amer.	New England	42 22 11 N	70 59 0 W	4 43 56 W	
Botany Bay	Asia	New Holland	34 0 0 S	151 21 0 E	10 5 24 E	
Botany (Island)	Asia	New Caledonia	22 26 40 S	167 16 45 E	11 9 7 E	
Bourbon (Isle)	Africa	Ind. Ocean	20 51 43 S	55 30 0 E	3 42 0 E	
Bourdeaux	Eur.	France	44 50 14 N	0 34 14 W	0 2 17 W	3 0
Bourges	Eur.	France	47 4 59 N	2 23 45 E	0 9 35 E	
Breslaw	Eur.	Silesia	51 3 0 N	17 8 45 E	1 8 35 E	
Brest	Eur.	France	48 22 42 N	4 29 19 W	0 57 1 W	3 45
Bridge Town	Amer.	Barbadoes	13 5 0 N	58 35 0 W	3 54 20 W	
St. Brieux	Eur.	France	48 31 21 N	2 43 17 W	0 10 53 W	
Brighton Starting-Houſe	Eur.	England	50 49 48 N	0 6 28 W	0 0 26 W	
Bristol (Cape)	Amer.	Sandwich Land	59 2 30 S	26 51 0 W	1 47 24 W	
Brussels	Eur.	Brabant	50 50 59 N	4 21 15 E	0 17 25 E	
Buenos Ayres	Amer.	Brasil	34 35 26 S	58 31 15 W	3 54 5 W	
Bukarost	Eur.	Walachia	44 26 45 N	26 8 0 E	1 44 32 E	
Buller (Cape)	Amer.	S. Georgia	53 58 30 S	37 40 0 W	2 30 40 W	
Burgeo (Isles)	Amer.	Newfoundland	47 36 20 N	57 36 30 W	3 50 24 W	
Burlings	Eur.	Portugal	39 20 0 N	9 36 45 W	0 38 27 W	
C.						
Cabello (Port)	Amer.	Terra Firma	10 30 50 N	67 32 0 W	4 30 8 W	
Cadiz	Eur.	Spain	36 32 0 N	6 16 15 W	0 25 5 W	4 30
Caen	Eur.	France	49 11 12 N	0 21 53 W	0 1 28 W	9 0
Cahors	Eur.	France	44 26 49 N	1 26 22 E	0 5 45 E	
Cairo	Africa	Egypt	30 3 12 N	31 18 16 E	2 5 49 E	
Calais	Eur.	France	50 57 32 N	1 51 1 E	0 7 24 E	11 30
Callao	Amer.	Peru	12 1 53 S	76 58 0 W	5 7 52 W	
Calcutta (F. Will.)	Asia	India	22 34 45 N	88 29 30 E	5 53 58 E	

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Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Calmar	Eur.	Sweden	56 40 30 N	16 21 45 E	1 5 27 E	
Cambray	Eur.	France	50 10 37 N	3 13 32 E	0 12 54 E	
Cambridge	Eur.	England	52 12 35 N	0 4 15 E	0 0 17 E	
Cambridge	Amer.	N. England	42 23 28 N	71 4 0 W	4 44 16 W	
Canary (Isle) N.E. Point	Africa	Canaries	28 13 0 N	15 38 45 W	1 2 35 W	3 0
Candia (Isle)	Eur.	Medit. Sea	35 18 35 N	25 18 0 E	1 41 12 E	
Candlemas Isles	Amer.	Sandwich Land	57 10 0 S	27 13 0 W	1 48 52 W	
Canso (Port)	Amer.	Nova Scotia	45 20 7 N	60 55 0 W	4 3 40 W	
Canterbury Cathedral	Eur.	England	51 18 26 N	1 4 53 E	0 4 19 E	
Canton	Asia	China	23 8 9 N	113 2 30 E	7 33 10 E	
Cape Capricorn	Asia	N. Holland	23 26 40 S	208 54 20 W	13 55 57 W	
Cape Clear	Eur.	Ireland	51 15 0 N	9 50 0 W	0 39 20 W	4 30
Cape Colenet	Asia	N. Caledonia	20 30 0 S	164 56 0 E	10 59 44 E	
Cape Comerin	Asia	India	7 56 0 N	78 5 0 E	5 22 20 E	
Cape Coronation	Asia	N. Caledonia	22 5 0 S	167 8 0 E	11 8 32 E	
Cape Cumberland	Asia	N. Hebrides	14 39 30 S	166 47 0 E	11 7 8 E	
Cape Florida	Amer.	Florida	25 44 0 N	80 44 0 W	5 22 56 W	
Cape How	Asia	N. Holland	57 31 57 S	210 39 3 W	14 2 36 W	
Cape Table	Asia	New Zealand	39 6 40 S	181 57 41 W	12 7 51 W	
Carlescroon	Eur.	Sweden	56 6 57 N	15 26 15 E	1 1 45 E	
Carthagena	Eur.	Spain	37 37 0 N	1 8 30 W	0 4 34 W	
Carthagena	Amer.	Terra Firma	10 25 19 N	75 42 54 W	5 2 52 W	
Casan	Asia	Siberia	55 43 58 N	49 8 15 E	3 16 33 E	
Cassel	Eur.	Germany	51 19 20 N	9 35 3 E	0 38 20 E	
Castres	Eur.	France	43 36 11 N	2 14 16 E	0 8 57 E	
St. Catherine's (Isle)	Amer.	Atl. Ocean	27 35 0 S	49 17 0 W	3 17 30 W	
Cavan	Eur.	Ireland	54 51 41 N	7 23 0 W	0 29 32 W	
Cayenne	Amer.	Isle Cayenne	4 56 15 N	52 15 0 W	3 29 0 W	
Ceylon, S. Point	Asia	India	5 47 0 N	81 2 0 E	5 24 8 E	
Cette	Eur.	France	43 23 51 N	3 42 7 E	0 14 48 E	
Challon	Eur.	France	46 46 54 N	4 51 27 E	0 19 24 E	
Châlons	Eur.	France	48 57 28 N	4 21 29 E	0 17 26 E	
Chandernagor	Asia	India	22 51 26 N	88 29 15 E	5 53 27 E	
Q. Charlotte Sound	Asia	N. Zealand	41 5 58 S	174 13 32 E	11 36 54 E	9 0
Q. Charlotte Foreland	Asia	N. Caledonia	22 15 0 S	167 12 45 E	11 8 51 E	
Q. Charlotte's Cape	Amer.	South Georgia	54 32 0 S	36 11 30 W	2 24 46 W	
Charlton Isle	Amer.	Hudson's Bay	52 3 0 N	79 5 0 W	5 16 20 W	
Chartres	Eur.	France	48 26 54 N	1 29 35 E	0 5 56 E	
Cherbourg	Eur.	France	49 38 31 N	1 37 18 W	0 6 29 W	7 30
Christmas Sound	Amer.	Terra del Fuego	55 21 57 S	70 2 50 W	4 40 11 W	2 30
St. Christopher's (Isle)	Amer.	Carib. Sea	17 15 0 N	62 43 0 W	4 10 52 W	
Churchill River	Amer.	Hudson's Bay	58 47 32 N	94 7 30 W	6 16 30 W	7 20
Civita Vecchia	Eur.	Italy	42 5 24 N	15 46 15 E	0 47 5 E	
Clerke's Isles	Amer.	Atl. Ocean	55 5 30 S	34 42 0 W	2 18 48 W	
Clermont	Eur.	France	45 46 44 N	3 5 2 E	0 12 20 E	
Cochin	Asia	India	9 33 0 N	75 35 0 E	5 2 20 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h. ′
Colmar	Eur.	France	48 4 44 N	7 22 11 E	0 29 29 E	
Cologne	Eur.	Germany	50 55 21 N	6 55 0 E	0 27 40 E	
Compiegne	Eur.	France	49 24 59 N	2 49 41 E	0 11 10 E	
Conception	Am.	Chili	36 42 53 S	72 40 0 W	4 50 40 W	
Constantinople	Eur.	Turkey	41 1 27 N	28 55 0 E	1 55 40 E	
Cooper's Isle	Am.	Atl. Ocean	54 57 0 S	36 4 20 W	2 24 17 W	
Copenhagen	Eur.	Denmark	55 41 4 N	12 35 15 E	0 50 21 E	
Coquimbo	Am.	Chili	29 52 0 S	71 19 0 W	4 45 3 W	
Cork	Eur.	Ireland	51 53 54 N	8 28 15 W	0 33 53 W	6 30
Corvo	Eur.	Azores	39 42 0 N	31 6 0 W	2 4 24 W	
Countances	Eur.	France	49 2 50 N	1 27 25 W	0 5 50 W	
Cowes West, Fort	Eur.	Isle of Wight	50 46 18 N	1 17 17 W	0 5 9 W	10 30
Cracow	Eur.	Poland	49 59 20 N	19 50 0 E	1 19 20 E	
Cremsmunster	Eur.	Germany	48 3 29 N	14 7 0 E	0 56 28 E	
Croisic	Eur.	France	47 17 40 N	2 31 42 W	0 10 7 W	
Cummin (Isle)	Asia	Pacific Ocean	31 40 0 N	121 4 0 E	8 4 16 E	
Cyprus	Asia	Syria	34 30 0 N	33 16 0 E	2 13 4 E	
		D.				
Dantzic	Eur.	Poland	54 21 9 N	18 38 0 E	1 14 32 E	
Dardenels Straits	Eur.	Turkey	40 10 0 N	26 26 0 E	1 45 44 E	
Dassen Island	Africa	Caffers	33 25 0 S	18 2 0 E	1 12 8 E	
Dax	Eur.	France	43 42 19 N	1 3 16 W	0 4 13 W	
Deal Castle	Eur.	England	51 13 5 N	1 23 59 E	0 5 36 E	
St. Dennis	Africa	I. Bourbon	20 51 43 S	55 30 0 E	3 42 0 E	
Diego (Cape)	Am.	Terra del Fuego	54 33 0 S	65 14 0 W	4 20 56 W	
Dieppe	Eur.	France	49 55 34 N	1 4 29 E	0 4 18 E	10 30
Dijon	Eur.	France	47 19 25 N	5 1 50 E	0 20 7 E	
Dillingen	Eur.	Germany	48 34 22 N	10 14 30 E	0 4 58 E	
Disappointm. (Cape)	Am.	So. Georgia	54 58 0 S	36 15 0 W	2 25 0 W	
Disseada (Cape)	Am.	Terra del Fuego	55 4 15 S	74 18 0 W	4 57 12 W	
Dol	Eur.	France	48 33 8 N	1 45 18 W	0 7 2 W	
Domingo Mole,	Asia	Atl. Ocean	19 49 0 N	73 25 0 W	4 53 40 W	
Dominique (Isle)	Am.	Windward Isles	15 18 23 N	61 27 55 W	4 5 52 W	
Dorchester Church	Eur.	England	50 42 58 N	2 25 40 W	0 9 43 W	
Douay	Eur.	Flanders	50 22 12 N	3 4 47 E	0 12 19 E	
Dover	Eur.	England	51 7 47 N	1 18 30 E	0 5 14 E	11 30
Dreux	Eur.	France	48 44 17 N	1 21 24 E	0 5 26 E	
Drontheim	Eur.	Norway	63 26 2 N	10 22 0 E	0 41 28 E	
Dublin	Eur.	Ireland	53 21 11 N	6 6 30 W	0 24 26 W	9 15
Dungeness	Eur.	England	50 52 20 N	0 59 6 E	0 3 56 E	9 45
Dunkirk	Eur.	France	51 2 11 N	2 22 23 E	0 9 30 E	0 0
Durham	Eur.	England	54 43 45 N	1 15 0 W	0 5 0 W	
Duskey Bay	Asia	N. Zealand	45 47 27 S	166 18 9 E	11 5 13 E	10 57
Dunnose	Eur.	England	50 33 30 N	1 16 20 W	0 5 5 W	9 45

The Latitudes and Longitudes of Places.

E.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Eaoowe (Isle)	Asia	Pacific Ocean	21 24 0 S	174 30 0 W	11 38 0 W	2 0
Eaſter Island	Am.	Pacific Ocean	27 6 30 S	109 46 45 W	7 19 7 W	4 30
Edinburgh	Eur.	Scotland	55 57 57 N	3 12 15 W	0 12 49 W	5 30
Edystone	Eur.	Eng. Channel	50 8 0 N	4 24 0 W	0 17 24 W	
Elsinore	Eur.	Denmark	56 0 0 N	13 35 0 E	0 54 20 E	
Embden	Eur.	Germany	53 5 0 N	7 26 0 E	0 29 44 E	
Embrun	Eur.	France	44 34 0 N	6 29 0 E	0 25 56 E	
Enatum (Isle)	Asia	Pacific Ocean	20 10 0 S	170 4 0 E	11 20 16 E	
Endeavour River	Asia	N. Holland	15 27 11 S	214 50 0 W	14 19 20 W	
English Road	Asia	Eaoowe	21 20 30 S	174 34 0 W	11 38 16 W	
Erramanga (Isle)	Asia	Pacific Ocean	18 46 30 S	169 18 30 E	11 17 14 E	
Erzerum	Asia	Armenia	39 56 35 N	48 35 45 E	3 14 23 E	
Euſtachia (Town)	Am.	Carib. Sea.	17 29 0 N	63 10 0 W	4 12 40 W	
Evout's Isles	Am.	Terra del Fuego	55 34 30 S	66 39 0 W	4 27 56 W	
Evereux	Eur.	France	49 1 30 N	1 8 54 E	0 4 35 E	
Exeter	Eur.	England	50 44 0 N	3 34 30 W	0 14 36 W	

F.

Falmouth	Eur.	England	50 8 0 N	5 2 30 W	0 20 10 W	5 30
False (Cape)	Afric.	Caffres	34 16 0 S	18 44 0 E	1 14 56 E	
False Bay	Afric.	Caffres	34 10 0 S	18 33 0 E	1 14 12 E	
Farewell (Cape)	Am.	Greenland	59 38 0 N	42 42 0 W	2 50 48 W	
Farewell (Cape)	Asia	N. Zealand	40 37 0 S	172 41 30 E	11 30 46 E	
Fayal Town	Eur.	Azores	38 32 20 N	28 41 5 W	1 54 44 W	2 20
Ferdinand Noronha	Am.	Brazil	3 56 20 S	32 38 0 W	2 10 32 W	
Ferrara	Eur.	Italy	44 49 56 N	11 36 10 E	0 46 25 E	
Ferro Isle (Town)	Afric.	Canaries	27 47 20 N	17 45 50 W	1 11 3 W	
Finisterre (Cape)	Eur.	Spain	42 54 0 N	9 17 10 W	0 37 9 W	
Flamborough Head	Eur.	England	54 8 0 N	0 11 0 E	0 0 44 E	
Florence	Eur.	Italy	43 46 30 N	11 3 30 E	0 44 14 E	
Flores	Eur.	Azores	39 34 0 N	31 0 0 W	2 4 0 W	
St. Flour	Eur.	France	45 1 55 N	3 5 30 E	0 12 22 E	
Fortaventure (W. Pt.)	Afric.	Canaries	28 4 0 N	14 31 30 W	0 58 6 W	
Foul Point	Afric.	Madagascar	17 40 14 S	49 53 0 E	3 19 32 E	
France (Isle of)	Afric.	Indian Ocean	20 9 45 S	57 28 0 E	3 49 52 E	
Francfort (on the Ma.)	Eur.	Germany	49 55 0 N	8 35 0 E	0 34 20 E	
François (Cape)	Am.	Hispaniola	19 46 30 N	72 18 0 W	4 49 12 W	
Old Cape François	Am.	Hispaniola	19 40 30 N	70 2 0 W	4 40 8 W	
Frawenburgh	Eur.	Prussia	54 22 15 N	20 7 30 E	1 20 30 E	
Frejus	Eur.	France	43 25 52 N	6 43 54 E	0 26 56 E	
Frekel (Cape)	Eur.	France	48 41 3 N	6 0 0 W	0 24 0 W	
Friesland's Peak	Am.	Sandw. Land	59 2 0 S	26 55 30 W	1 47 42 W	

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Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Fronsac (Strait)	Am.	Nova Scotia	45 36 37 N	61 19 30 W	4 5 18 W	
Fuego (Isle)	Africa	Cape Verde	14 56 45 N	24 28 0 W	1 37 52 W	
Funchal	Africa	Madeira	32 37 40 N	17 6 15 W	1 8 25 W	12 4
Furneaux Island	Asia	Pacif. Ocean	17 11 0 S	143 6 40 W	9 28 27 W	
		G.				
Gabey	Asia	New Guinea	0 6 0 S	126 23 45 E	8 25 35 E	
Gap	Eur.	France	44 33 37 N	6 4 47 E	0 24 19 E	
Genes	Eur.	Italy	44 25 0 N	8 35 45 E	0 34 23 E	
Geneva	Eur.	Savoy	46 12 0 N	6 0 0 E	0 24 0 E	
Genoa	Eur.	Italy	44 25 0 N	8 56 37 E	0 34 23 E	
St. George (Isle)	Eur.	Azores	38 39 0 N	28 0 0 W	1 52 0 W	
St. George (Town)	Amer.	Bermudas	32 45 0 N	63 35 0 W	4 14 20 W	
St. George (Fort)	Asia	India	13 4 54 N	80 28 45 E	5 21 55 E	
St. George (Cape)	Asia	New Britain	4 53 30 S	153 8 45 E	10 12 35 E	
George (Cape)	Amer.	South Georgia	54 17 0 S	36 32 30 W	2 26 10 W	
Ghent	Eur.	Flanders	51 3 0 N	3 43 45 E	0 14 55 E	
Gibraltar	Eur.	Spain	36 6 30 N	5 22 0 W	0 21 28 W	
Gilbert's Isle	Amer.	Terra del Fuego	55 13 0 S	71 6 45 W	4 44 11 W	
Glasgow	Eur.	Scotland	55 51 32 N	4 15 0 W	0 17 0 W	
Goa	Asia	India	15 31 0 N	73 45 0 E	4 55 0 E	
Goat Isle	Asia	Indian Ocean	13 55 0 N	120 2 0 E	8 0 8 E	
Gomera (Isle)	Africa	Canaries	28 5 40 N	17 8 0 W	1 8 32 W	
Good Hope (Cape)	Africa	Caffres	34 29 0 S	18 23 15 E	1 13 33 E	3 0
Good Hope (Town)	Africa	Caffres	33 55 42 S	18 23 15 E	1 13 33 E	2 30
Goree (Isle)	Africa	Atl. Ocean	14 40 10 N	17 25 0 W	1 9 40 W	1 30
Gottenburgh	Eur.	Sweden	57 42 0 N	11 38 45 E	0 46 35 E	
Gottengen (Obser.)	Eur.	Germany	51 31 54 N	9 53 0 E	0 39 32 E	
Granville	Eur.	France	48 50 16 N	1 36 15 W	0 6 25 W	7 0
Grasse	Eur.	France	43 39 19 N	6 55 9 E	0 27 41 E	
Gratisoa	Eur.	Azores	39 2 0 N	27 58 0 W	1 51 52 W	
Gratz	Eur.	Germany	47 4 9 N	15 25 45 E	1 1 48 E	
Gravelines	Eur.	Flanders	50 59 4 N	2 7 32 E	0 8 30 E	
Greenwich (Obser.)	Eur.	England	51 28 40 N	0 0 0	0 0 0	
Grenoble	Eur.	France	45 11 42 N	5 43 34 E	0 22 54 E	
Gryphiswald	Eur.	Germany	54 4 25 N	13 38 30 E	0 54 34 E	
Guadaloupe	Amer.	Carib. Sea	15 59 30 N	61 48 15 W	4 7 13 W	
Guiaquil	Amer.	Peru	2 11 21 S	81 11 30 W	5 24 46 W	
Gurief	Asia	Siberia	47 7 7 N	51 56 0 E	3 27 44 E	
Guernsey	Eur.	Brit. Channel	49 30 0 N	2 47 0 W	0 11 8 W	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			H.			
			° ′ ″	° ′ ″	h ′ ″	h ′
Hague	Eur.	Netherlands	52 4 10 N	4 17 30 E	0 17 10 E	8 15
Hamburgh	Eur.	Netherlands	52 33 3 N	10 1 11 E	0 39 20 E	6 0
Hang-lip (Cape)	Africa	Caffres	34 16 0 S	18 44 0 E	1 14 56 E	
Hanover	Eur.	Germany	52 22 18 N	9 48 15 E	0 38 57 E	
Harborough (Mark.)	Eur.	England	52 28 30 N	0 57 25 W	0 3 50 W	
Harlem	Eur.	Netherlands	52 22 14 N	4 37 0 E	0 18 28 E	
Hastings	Eur.	England	50 52 10 N	0 41 10 E	0 2 45 W	
Havannah	Amer.	Cuba	23 11 52 N	82 18 30 W	5 29 14 W	
Havre-de-grace	Eur.	France	49 29 14 N	0 6 23 E	0 0 26 E	9 0
Heese (La)	Eur.	Netherlands	51 23 2 N	4 45 30 E	0 10 2 E	
St. Helena (Ja. Town)	Africa	S. Atl. Ocean	15 55 0 S	5 49 0 W	0 23 16 W	
Henlopen (Cape)	Amer.	Virginia	38 46 0 N	75 12 30 W	5 0 50 W	
Hernosand	Eur.	Sweden	62 38 0 N	17 53 0 E	1 11 32 E	
Hervey's Isle	Asia	Pacific Ocean	19 17 0 S	158 48 0 W	10 35 12 W	
Hinchinbroke Isle	Asia	Pacific Ocean	17 25 0 S	168 38 0 E	11 14 32 E	
Hoai Nghan	Asia	China	33 34 40 N	118 49 30 E	7 55 18 E	
Hogue (Cape La)	Eur.	France	49 44 40 N	1 56 50 W	0 7 47 W	
Holyhead	Eur.	Wales	53 23 0 N	4 40 0 W	0 18 40 W	
Hood's Isle	Asia	Pacific Ocean	9 26 0 S	138 52 0 W	9 15 28 W	
Hoogstraeten	Eur.	Netherlands	51 24 44 N	4 47 0 E	0 19 8 E	
Horn (Cape)	Amer.	Terra del Fuego	55 58 0 S	68 13 0 W	4 29 44 W	
Hout Bay	Africa	Caffres	34 3 0 S	18 19 0 E	1 13 16 E	
Howe's Isle	Asia	Pacific Ocean	16 46 30 S	154 6 40 W	10 16 27 W	
Huahine (Isle)	Asia	Pacific Ocean	16 44 0 S	151 6 0 W	10 4 24 W	
Hull	Eur.	England	53 50 0 N	0 28 0 W	0 1 52 W	
Hurst Castle	Eur.	England	50 42 23 N	1 32 45 W	0 6 11 W	
			I. J.			
Jaffa	Asia	Syria	32 5 0 N	35 10 0 E	2 20 40 E	
Jamaica (Port Royal)	Am.	Atl. Ocean	18 0 0 N	76 44 30 W	5 6 58 W	
Jakutskoi	Asia	Siberia	62 1 30 N	129 47 45 E	8 39 11 E	
Janeiro (Rio)	Am.	Brazil	22 54 10 S	42 43 45 W	2 50 55 W	
Jassy	Eur.	Moldavia	47 8 30 N	27 29 45 E	1 49 59 E	
Java Head	Asia	Java	6 49 0 S	106 50 0 E	7 7 20 E	
Jerusalem	Asia	Palestine	31 46 34 N	35 20 0 E	2 21 20 E	
St. Ildefonso's Isles	Am.	Terra del Fuego	55 51 0 S	69 21 0 W	5 37 52 W	
Immer (Isle)	Asia	Pacific Ocean	19 16 0 S	169 46 0 E	11 19 4 E	
Ingolstadt	Eur.	Germany	48 45 45 N	11 22 30 E	0 45 30 E	
St. John's	Am.	Antigua	17 4 30 N	62 9 0 W	4 8 36 W	
St. John's	Am.	Newfoundland	47 32 0 N	52 26 0 W	3 29 44 W	6 0
Joppa	Asia	Syria	32 45 0 N	36 0 0 W	2 24 0 W	
St. Joseph's	Am.	California	23 3 42 S	109 42 30 W	7 18 50 W	
Irraname (Isle)	Asia	Pacific Ocean	19 31 0 S	170 21 0 E	11 21 24 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Islamabad	Asia	India	22 20 0 N	91 45 0 E	6 7 0 E	
Isle of Pines	Asia	Pacif. Ocean	22 38 0 S	167 38 0 E	11 10 32 E	
Ispahan	Asia	Persia	32 25 0 N	52 50 0 E	3 31 20 E	
St. Juan (Cape)	Am.	Staten Land	54 47 10 S	63 47 0 W	4 15 8 W	
Judda	Asia	Arabia	21 29 0 N	39 22 0 E	2 37 28 E	
St. Juliana (Port)	Am.	Patagonia	49 10 0 S	68 44 0 W	4 34 56 W	4 45
Juthia	Asia	India	14 18 0 N	100 50 0 E	6 43 20 E	
		K.				
Kedgeree	Asia	India	21 48 0 N	88 50 15 E	5 55 21 E	
Kiow	Eur.	Ukraine	50 27 0 N	30 27 30 E	2 1 50 E	
Kola	Eur.	Lapland	68 52 30 N	33 0 30 E	2 12 2 E	
		L.				
Ladrone (Grand)	Asia	Pacific Ocean	22 2 0 N	113 56 0 E	7 35 44 E	
Laguna	Africa	Teneriffe	28 28 57 N	16 18 15 W	1 5 13 W	
Lancarota (E. Pt.)	Africa	Canaries	29 14 0 N	13 26 0 W	0 53 44 W	
Landau	Eur.	France	49 11 38 N	8 7 30 E	0 32 30 E	
Landscroon	Eur.	Sweden	55 52 31 N	12 50 46 E	0 51 23 E	
Lands-End	Eur.	England	50 4 7 N	5 41 31 W	0 22 46 W	
Langres	Eur.	France	47 52 17 N	5 19 23 E	0 21 18 E	
Lausanne	Eur.	Switzerland	46 31 5 N	6 45 15 E	0 27 1 E	
Lectoure	Eur.	France	43 56 2 N	0 36 53 E	0 2 28 E	
Leeds	Eur.	England	53 48 0 N	1 34 15 W	0 6 17 W	
Leghorn	Eur.	Italy	43 33 0 N	10 25 0 E	0 41 40 E	
Leicester	Eur.	England	52 38 0 N	1 8 30 W	0 4 34 W	
Leipsic	Eur.	Saxony	51 19 14 N	12 20 0 E	0 49 20 E	
Leper's Island	Asia	Pacific Ocean	15 23 30 S	167 58 15 E	11 11 53 E	
Leskeard	Eur.	England	50 26 55 N	4 41 45 W	0 18 47 W	
Lesparre	Eur.	France	45 18 33 N	0 57 3 W	0 3 48 W	
Leyden	Eur.	Holland	52 8 40 N	4 28 0 E	0 17 52 E	
Liege	Eur.	Netherlands	50 37 30 N	5 35 0 E	0 22 20 E	
Lima	Amer.	Peru	12 1 15 S	76 49 30 W	5 7 18 W	
Limoges	Eur.	France	45 49 44 N	1 15 50 E	0 5 4 E	
Lintz	Eur.	Germany	48 16 0 N	13 57 30 E	0 55 50 E	
Lisieux	Eur.	France	49 8 50 N	0 13 32 E	0 0 54 E	
Lisle	Eur.	Flanders	50 37 50 N	3 4 16 E	0 12 17 E	
Lisbon	Eur.	Portugal	38 42 25 N	9 4 40 W	0 36 40 W	2 15
Lion's Bank	Eur.	Atl. Ocean	56 40 0 N	17 45 0 W	1 11 0 W	
Lisburne (Cape)	Asia	N. Hebrides	15 40 45 S	166 57 0 E	11 7 48 E	
Liverpool	Eur.	England	53 22 0 N	3 10 0 W	0 12 40 W	
Lizard Flagstaff	Eur.	England	49 57 56 N	5 11 18 W	0 20 45 W	7 30
Lombes	Eur.	France	43 28 30 N	0 55 9 E	0 3 41 E	
London (St. Paul's)	Eur.	England	51 31 0 N	0 5 37 W	0 0 22½ W	3 0

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Lorenzo (Cape)	Amer.	Peru	1 2 0 S	80 17 0 W	5 21 8 W	
St. Louis (Port)	Amer.	Hispaniola	18 18 50 N	73 16 0 W	4 53 4 W	
St. Louis (Port)	Africa	Mauritius	20 9 45 S	57 28 0 E	3 49 52 E	
Louisbourg	Amer.	Cape Breton	45 53 40 N	59 55 0 W	3 59 40 W	
Louveau	Asia	India	12 42 30 N	101 1 30 E	6 44 6 E	
Louvain	Eur.	Netherlands	50 53 3 N	4 44 15 E	0 18 57 E	
Lowestoffe	Eur.	England	52 29 0 N	1 44 9 E	0 6 57 E	
St. Lucia (Isle)	Amer.	Antilles	13 24 30 N	60 51 30 W	4 3 26 W	
Lunden	Eur.	Sweden	55 42 26 N	13 12 27 E	0 52 50 E	
Luneville	Eur.	France	48 35 33 N	6 30 6 E	0 26 0 E	
Luson	Eur.	France	46 27 15 N	1 10 34 W	0 4 42 W	
Luxembourg	Eur.	Netherlands	49 37 6 N	6 11 45 E	0 24 47 E	
Lyme Steeple	Eur.	England	51 4 20 N	1 1 22 E	0 4 5 E	
Lynn	Eur.	England	52 45 16 N	0 23 45 E	0 1 35 E	
Lyons	Eur.	France	45 45 52 N	4 49 9 E	0 19 17 E	
		M.				
Macao	Asia	China	22 12 44 N	113 46 15 E	7 35 5 E	
Macassar	Asia	Celebes	5 9 0 S	119 48 45 E	7 59 15 E	
Madeira (Funchal)	Africa	Atl. Ocean	32 37 40 N	16 56 0 W	1 7 44 W	12 4
Madras	Asia	India	13 4 54 N	80 28 45 E	5 21 55 E	
Madre de Dios (Port)	Asia	Marquesas	9 55 30 S	139 8 40 W	9 16 35 W	2 30
Madrid	Eur.	Spain	40 25 18 N	3 12 0 W	0 14 8 W	
Magdalena (Isle)	Asia	Pacific Ocean	10 25 30 S	138 49 0 W	9 15 16 W	
Mahon (Port)	Eur.	Minorca	39 50 46 N	3 48 30 E	0 15 14 E	
Majorca (Isle)	Eur.	Mediterr. Sea	39 35 0 N	2 29 45 E	0 9 59 E	
Malacca	Asia	India	2 12 0 N	102 5 0 E	6 48 20 E	
Malines	Eur.	Netherlands	51 1 50 N	4 28 45 E	0 17 55 E	
Mallicola (Isle)	Asia	Pacific Ocean	16 15 30 S	167 39 15 E	11 10 37 E	
St. Maloes	Eur.	France	48 38 59 N	2 2 22 W	0 8 9 W	6 0
Malta (Isle)	Africa	Mediterr. Sea	35 53 47 N	14 28 30 E	0 57 54 E	
Manilla	Asia	Philippines	14 36 8 N	120 52 0 E	8 3 28 E	
St. Margaret's Steeple	Eur.	England	51 9 14 N	1 22 7 E	0 5 28 E	
Marigalante (Isle)	Amer.	Atl. Ocean	15 55 15 N	61 11 0 W	4 4 44 W	
Marseilles	Eur.	France	43 17 43 N	5 21 43 E	0 21 27 E	
St. Martha	Amer.	Terra Firma	11 26 40 N	74 4 30 W	4 56 18 W	
St. Martin's (Isle)	Amer.	Carib. Sea	18 4 20 N	63 2 0 W	4 12 8 W	
Martinico (Port-royal)	Amer.	Atl. Ocean	14 35 55 N	61 9 0 W	4 4 36 W	
St. Mary's (Isle)	Eur.	Scilly Isles	49 57 30 N	6 43 0 W	0 26 52 W	3 45
St. Mary's (Town)	Eur.	Azores	36 56 40 N	25 9 15 W	1 40 37 W	
Maskelyne's Isle	Asia	Pacific Ocean	16 32 0 S	167 59 15 E	11 11 57 E	
St. Matthew (Lights)	Eur.	France	48 19 52 N	4 47 25 W	0 19 10 W	
Mauritius	Africa	Ind. Ocean	20 9 45 S	57 29 15 E	3 49 57 E	
Maurua (Isle)	Asia	Pacific Ocean	16 25 40 S	152 32 40 W	10 10 11 W	
Mayence	Eur.	Germany	49 54 0 N	8 20 0 E	0 33 20 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Mayne (John's) Isle	Eur.	North Ocean	71 10 0 N	9 49 30 W	0 39 18 W	
Mayo (Isle)	Afric.	Cape Verde	15 10 0 N	23 5 0 W	1 32 20 W	
Meaux	Eur.	France	48 57 40 N	2 52 30 E	0 11 30 E	
Mecca	Asia	Arabia	21 40 0 N	41 0 0 E	2 44 0 E	
Mende	Eur.	France	44 31 2 N	3 29 35 E	0 13 58 E	
Mergui	Asia	Siam	12 12 0 N	98 8 45 E	6 32 35 E	
Metz	Eur.	France	49 7 10 N	6 10 13 E	0 24 41 E	
Mew Stone	Asia	New Holland	43 48 0 S	146 27 0 E	9 45 48 E	
Mexico	Amer.	Mexico	19 25 50 S	100 5 45 W	6 40 23 W	
Méziéres	Eur.	France	49 45 47 N	4 43 16 E	0 18 53 E	
Miatea (Isle)	Asia	Pacific Ocean	17 52 0 S	148 6 0 W	9 52 24 W	
St. Michael's (Isle)	Eur.	Azores	37 47 0 N	25 42 0 W	1 42 48 W	
Middleburgh (Isle)	Asia	Pacific Ocean	21 20 30 S	174 34 0 W	11 38 16 W	
Milan	Eur.	Italy	45 27 57 N	9 11 45 E	0 36 47 E	
Milo (Isle)	Eur.	Mediterr. Sea	36 41 0 N	25 0 0 E	1 40 0 E	
Minorca (Fort St. Philip)	Eur.	Mediterr. Sea	39 51 0 N	3 54 0 E	0 15 36 E	
Modena	Eur.	Italy	44 34 0 N	11 12 30 E	0 44 50 E	
Mons	Eur.	Netherlands	50 27 10 N	3 57 15 E	0 15 49 E	
Montagu (Cape)	Amer.	Sandwich Land	58 33 0 S	26 46 0 W	1 47 4 W	
Montagu (Isle)	Asia	Pacific Ocean	17 26 0 S	168 31 30 E	11 14 6 E	
Montmirail	Eur.	France	48 52 8 N	3 32 16 E	0 14 9 E	
Montpellier	Eur.	France	43 36 29 N	3 52 25 E	0 15 30 E	
Montreal	Amer.	Canada	45 50 0 N	73 11 0 W	4 52 44 W	
Montserrat (Isle)	Amer.	Carib. Sea.	16 47 30 N	62 17 0 W	4 9 8 W	
Monument (The)	Asia	Pacific Ocean	17 14 15 S	168 38 15 E	11 14 33 E	
Moscow	Eur.	Moscovy	55 45 45 N	37 32 45 E	2 30 11 E	
Moulins	Eur.	France	46 34 4 N	3 19 59 E	0 13 20 E	
Munich	Eur.	Bavaria	48 9 55 N	11 30 0 E	0 46 0 E	
Musketto Cove	Amer.	Greenland	64 55 13 N	52 56 45 W	3 31 47 W	10 15
Muswell Hill	Eur.	England	51 35 32 N	0 7 20 W	0 0 29 W	
		N.				
Namur	Eur.	Netherlands	50 28 32 N	4 44 45 E	0 18 59 E	
Nancy	Eur.	France	48 41 55 N	6 10 16 E	0 24 41 E	
Nangasachi	Asia	Japan	32 32 0 N	128 46 15 E	8 35 5 E	
Nankin	Asia	China	32 4 40 S	118 47 0 E	7 55 8 E	
Nantes	Eur.	France	47 13 6 N	1 32 59 W	0 6 12 W	3 0
Naples	Eur.	Italy	40 50 15 N	14 17 30 E	0 57 10 E	
Narbonne	Eur.	France	43 10 58 N	2 59 59 E	0 12 0 E	
Nevers	Eur.	France	46 59 17 N	3 9 16 E	0 12 37 E	
New Year's Harbour	Amer.	Staten Land	54 48 55 S	64 11 0 W	4 16 44 W	
Niagara	Amer.	Canada	43 4 25 N	79 7 51 W	5 16 31 W	
Nice	Eur.	France	43 41 47 N	7 16 22 E	0 29 5 E	
St. Nicholas Mole	Amer.	Hispaniola	19 49 20 N	73 29 45 W	4 53 59 W	
Nieuport	Eur.	Flanders	51 7 41 N	2 45 0 E	0 11 0 E	12 0
Ningpo	Asia	China	29 57 45 N	120 18 0 E	8 1 12 E	
Nismes	Eur.	France	43 50 12 N	4 18 39 E	0 17 15 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Noir (Cape)	Amer.	Terra del Fuego	54 32 30 S	73 3 15 W	4 48 13 W	
Nootka	Amer.	Pacific Ocean	49 36 6 N	126 42 30 W	8 26 50 W	
Norfolk Island	Asia	Pacific Ocean	29 1 45 N	168 10 0 E	11 12 40 E	
Noriton	Amer.	Pensylvania	40 9 56 N	75 23 30 W	5 1 34 W	
North Cape	Eur.	Lapland	71 10 0 N	25 57 0 E	1 43 48 E	3 0
Cape North	Amer.	South Georgia	54 4 45 N	38 15 0 W	2 33 0 W	
Noyon	Eur.	France	49 34 59 N	3 59 48 E	0 11 59 E	
Nuremberg	Eur.	Germany	49 26 55 N	11 4 0 E	0 44 16 E	
O.						
Oaitipeha Bay	Asia	Otaheite	17 29 17 S	149 35 45 W	9 56 57 W	
Ochoz	Asia	Tartary	59 20 10 N	143 12 30 E	9 32 50 E	
Ohamaneno Harbour	Asia	Uliateah	16 45 30 S	151 38 5 W	10 6 32 W	11 20
Ohevahoa (Isle)	Asia	Pacific Ocean	9 40 40 S	139 1 40 W	9 16 7 W	
Ohitahoo (Isle)	Asia	Pacific Ocean	9 55 30 S	139 6 0 W	9 16 24 W	2 30
Oleron (Isle)	Eur.	France	46 2 50 N	1 25 13 W	0 5 41 W	
Olinde	Amer.	Brazil	8 13 0 S	35 5 30 W	2 20 22 W	
St. Omer's	Eur.	Flanders	50 44 46 N	2 14 57 E	0 9 0 E	
Onateayo (Isle)	Asia	Pacific Ocean	9 58 0 S	138 51 0 W	9 15 24 W	
Oporto	Eur.	Portugal	41 10 0 N	8 22 0 W	0 33 8 W	
Orenburg	Asia	Tartary	51 46 5 N	55 4 30 E	3 40 18 E	
Orleans	Eur.	France	47 54 10 N	1 54 27 E	0 7 38 E	
Orleans (New)	Amer.	Louisiana	29 57 45 N	89 58 45 W	5 59 55 W	
Oratava	Afric.	Teneriffe	28 23 27 N	16 24 11 W	1 5 37 W	
Orsk	Asia	Tartary	51 12 30 N	58 30 45 E	3 54 3 E	
Ortagal (Cape)	Eur.	Spain	43 46 30 N	7 39 0 W	0 30 36 W	
Osnaburg (Isle)	Asia	Pacific Ocean	17 49 30 S	149 26 15 W	9 52 24 W	
Ostend	Eur.	Netherlands	51 13 55 N	2 55 45 E	0 11 43 E	12 0
Owharre Bay	Asia	Huahine	16 44 0 S	151 8 15 W	10 4 33 W	
Oxford (Observatory)	Eur.	England	51 45 38 N	1 15 30 W	0 5 2 W	
P.						
Padua	Eur.	Italy	45 23 40 N	11 52 30 E	0 47 30 E	
Paita	Am.	Peru	5 12 0 S			
Palliser's (Isles)	Asia	Pacific Ocean	15 38 15 S	146 30 15 W	9 46 1 W	
Palliser (Cape)	Asia	New Zealand	41 38 0 S	175 18 0 E	11 44 30 E	
Palma (Isle)	Africa	Canaries	28 36 45 N	17 50 0 W	1 11 20 W	
Palmerston's (Isle)	Asia	Pacific Ocean	18 0 0 S	162 57 0 W	10 41 48 W	
Panama	Am.	Mexico	8 47 48 N	80 21 0 W	5 21 24 W	
Paoom (Isle)	Asia	Pacific Ocean	16 30 0 S	168 28 45 E	11 13 55 E	
Paris (Observ.)	Eur.	France	48 50 14 N	2 20 0 E	0 9 20 E	
Patrixfiord	Eur.	Iceland	65 35 45 N	24 10 0 W	1 36 40 W	
Pau	Eur.	France	43 15 0 N	0 9 0 W	0 0 36 W	
St. Paul's (Isle)	Africa	Indian Ocean	37 51 0 S	77 48 0 E	5 11 12 E	
St. Paul de Léon	Eur.	France	48 40 55 N	4 0 21 W	0 16 1 W	4 0

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h. ′
Pekin	Asia	China	39 54 13 N	116 27 30 E	7 45 50 E	
Perigueux	Eur.	France	45 11 8 N	0 43 9 E	0 2 53 E	
Perinaldi	Eur.	Italy	43 53 20 N	7 40 0 E	0 30 40 E	
Perpignan	Eur.	France	42 41 53 N	2 53 35 E	0 11 34 E	
St. Peter's Fort	Amer.	Martinico	14 44 0 N	61 21 16 W	4 5 25 W	
St. Peter's (Isle)	Amer.	Atl. Ocean	46 46 30 N	56 17 0 W	3 45 8 W	
Petersburg	Eur.	Russia	59 56 23 N	30 19 0 E	2 1 16 E	
Petit Goave	Amer.	Hispaniola	18 27 0 N	72 52 30 W	4 51 30 W	
Petropawloskoi	Asia	Kamchatka	53 1 20 N	158 48 0 E	10 35 13 E	
Philadelphia	Amer.	Pensylvania	39 56 55 N	75 13 30 W	5 0 54 W	
St. Philip's Fort	Eur.	Minorca	39 50 46 N	3 48 30 E	0 15 14 E	
Pickersgill's (Isle)	Amer.	Atl. Ocean	54 42 30 S	26 58 0 W	2 27 52 W	
Pickersgill's Harbour	Asia	N. Zealand	45 47 27 S	166 18 9 E	11 5 13 E	
Pico	Eur.	Azores	38 28 40 N	28 26 0 W	1 53 44 W	
Pines (Isle)	Asia	N. Caledonia	22 38 0 S	167 38 0 E	11 10 32 E	
Pisa	Eur.	Italy	43 43 7 N	10 23 0 E	0 41 32 E	
Plymouth Garrison	Eur.	England	50 21 22 N	4 7 24 W	0 16 30 W	6 0
Poitiers	Eur.	France	46 34 50 N	0 20 48 E	0 1 23 E	
Pollingen	Eur.	Germany	47 48 17 N	11 7 17 E	0 44 29 E	
Poole Church	Eur.	England	50 42 50 N	1 58 55 W	0 7 56 W	
Pondicherry	Asia	India	11 41 55 N	79 52 45 E	5 19 31 E	
Ponoi	Eur.	Lapland	67 4 30 N	36 23 15 E	2 25 33 E	
Pontoise	Eur.	France	49 3 2 N	2 5 37 E	0 8 22 E	
Portland Light-house	Eur.	England	50 31 22 N	2 26 49 W	0 9 47 W	
Porto Bello	Am.	Mexico	9 33 5 N	79 50 20 W	5 19 21 W	
Porto Sancto (Isle)	Africa	Madeira	32 58 15 N	16 25 15 W	1 5 41 W	
Port Royal	Am.	Jamaica	18 0 0 N	76 45 30 W	5 7 2 W	
Port Royal	Am.	Martinico	14 35 55 N	61 9 0 W	4 4 36 W	
Portsmouth Church	Eur.	England	50 47 27 N	1 5 57 W	0 4 24 W	11 15
Portsmouth Academy	Eur.	England	50 48 2 N	1 6 1 W	0 4 24 W	
Portland (Isle)	Eur.	North Sea	63 22 0 N	18 54 0 W	1 15 36 W	
Portland (Isle)	Asia	Pacific Ocean	39 25 0 S	178 12 0 E	11 52 48 E	
Port Paix	Am.	Hispaniola	19 58 0 N	73 2 0 W	4 48 8 W	
Port Praya	Africa	St. Jago	14 53 53 N	23 29 22 W	1 33 57 W	11 0
Prague	Eur.	Bohemia	50 5 47 N	14 24 0 E	0 57 36 E	
Prin. of Wales's Fort	Am.	New Wales	58 47 32 N	94 7 30 W	6 16 30 W	
Providence	Am.	New England	41 50 40 N	71 26 0 W	4 45 44 W	
Pudyoua	Asia	New Caledonia	20 18 0 S	164 41 14 E	10 58 45 E	6 30
Pulo Condor (Isle)	Asia	Indian Ocean	8 40 0 N	107 20 0 E	7 9 20 E	
Pulo Timon (Isle)	Asia	Gulph Siam	3 0 0 N	104 25 0 E	6 57 40 E	
Pylestaart's (Isle)	Asia	Pacific Ocean	22 23 0 S	175 41 30 W	11 42 46 W	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
Q.						
			° ′ ″	° ′ ″	h ′ ″	h ′
Quebec	Am.	Canady	46 47 30 N	71 10 0 W	4 44 40 W	7 30
Quimper	Eur.	France	47 58 29 N	4 6 0 W	0 16 24 W	
St. Quinton	Eur.	France	49 50 51 N	3 17 23 E	0 13 10 E	
Quiros (Cape)	Asia	N. Hebrides	14 56 8 S	167 20 0 E	11 9 20 E	
Quinto	Am.	Peru	0 13 17 S	77 55 0 W	5 11 40 W	
R.						
Rakah (Ancient)	Asia	Mesopotamia	36 1 0 N	38 50 0 E	2 35 20 E	
Ramhead	Eur.	England	50 18 40 N	4 20 15 W	0 17 21 W	
Ramsgate Windmill	Eur.	England	51 19 49 N	1 24 4 E	0 5 36 E	
Re (Isle)	Eur.	France	46 14 48 N	1 34 28 W	0 6 18 W	3 0
Recif	Am.	Brazil	8 10 0 S	35 35 0 W	2 22 20 W	
Reikianess (Cape)	Eur.	Iceland	63 55 0 N	22 47 30 W	1 31 10 W	
Rennes	Eur.	France	48 6 45 N	1 41 53 W	0 6 48 W	
Resolution (Bay)	Asia	Ohitahoo	9 55 30 S	139 8 40 W	9 16 35 W	2 30
Resolution (Isle)	Asia	Pacific Ocean	17 23 30 S	141 45 0 W	9 27 0 W	
Resolution (Port)	Asia	Tanna	19 32 25 S	169 41 5 E	11 18 44 E	
Rheims	Eur.	France	49 15 16 N	4 1 48 E	0 16 7 E	
Rhodes	Eur.	France	44 20 59 N	2 34 17 E	0 10 17 E	
Rhodes	Asia	Archipelago	35 27 0 N	28 45 0 E	1 55 0 E	
Rimini	Eur.	Italy	44 3 43 N	12 34 15 E	0 50 17 E	
Rio Janeiro	Am.	Brazil	22 54 10 S	42 43 45 W	2 50 55 W	
Rochelle	Eur.	France	46 9 21 N	1 9 55 W	0 4 40 W	3 45
Rochford	Eur.	France	45 56 10 N	0 57 49 W	0 3 51 W	4 15
Rock of Lisbon	Eur.	Portugal	38 45 30 N	9 35 30 W	0 38 22 W	
Rodrigues (Isle)	Africa	Indian Ocean	19 40 40 S	63 10 0 E	4 12 40 E	
Rome (St. Peter's)	Eur.	Italy	41 53 54 N	12 29 15 E	0 49 57 E	
Rotterdam	Eur.	Holland	51 55 58 N	4 29 0 E	0 17 56 E	3 0
Rotterdam (Isle)	Asia	Pacific Ocean	20 16 30 S	174 30 30 W	11 38 2 W	
Rouen	Eur.	France	49 26 27 N	1 1 32 W	0 4 6 W	1 15
S.						
Saba (Isle)	Amer.	Carib. Sea	17 39 30 N	63 17 15 W	4 13 9 W	
Sable (Cape)	Amer.	Nova Scotia	43 23 45 N	65 39 15 W	4 22 37 W	
Sagan	Eur.	Silesia	51 42 12 N	15 22 15 E	1 1 29 E	
Saintes	Eur.	France	45 44 43 N	0 38 54 W	0 2 36 W	
Sainte-Croix	Eur.	France	48 0 35 N	7 23 55 E	0 29 36 E	
Salisbury Spire	Eur.	England	51 3 49 N	1 47 0 W	0 7 8 W	
Sall (Isle)	Africa	Atl. Ocean	16 38 15 N	22 56 15 W	1 31 45 W	
Salonique	Eur.	Turkey	40 41 10 N	23 8 0 E	1 32 32 E	
Salvages (Isles)	Africa	Atl. Ocean	30 0 0 N	15 54 0 W	1 3 36 W	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
Samana	Amer.	Hispaniola	19 15 0 N	69 16 30 W	4 37 6 W	
Samos	Asia	Archipelago	37 46 0 N	27 13 0 E	1 48 52 E	
Sancta Cruz	Africa	Teneriffe	28 27 30 N	16 16 15 W	1 5 5 W	
Sandwich (Bay)	Amer.	South Georgia	54 42 0 S	36 12 0 W	2 24 48 W	
Sandwich (Cape)	Asia	Mallicola	16 28 0 S	167 59 0 E	11 11 56 E	
Sandwich Harbour	Asia	Mallicola	16 25 20 S	167 53 0 E	11 11 32 E	
Sandwich (Isle)	Asia	Pacific Ocean	17 41 0 S	168 33 0 E	11 14 12 E	
Saunder's (Cape)	Amer.	Sandw. Land	54 6 30 S	36 57 30 W	2 27 50 W	
Saunder's (Isle)	Amer.	South Georgia	58 0 0 S	26 58 0 W	1 47 52 W	
Savage (Isle)	Asia	Pacific Ocean	19 2 15 S	169 30 30 W	11 18 2 W	
Scarborough Head	Eur.	England	54 18 0 N	0 13 0 W	0 0 52 W	
Schwezingen	Eur.	Germany	49 23 4 N	8 40 45 E	0 34 23 E	
Scilly Isles (Lights)	Eur.	Eng. Channel	49 56 0 N	6 46 0 W	0 27 4 W	
Sebastian St. (Cape)	Africa	Madagascar	12 30 0 S	46 25 0 E	3 5 40 E	
Sedan	Eur.	France	49 42 29 N	4 57 36 E	0 19 50 E	
Seez	Eur.	France	48 36 23 N	0 10 44 E	0 0 43 E	
Senegal	Africa	Negroland	15 53 0 N	16 31 30 W	1 6 6 W	10 30
Senlis	Eur.	France	49 12 28 N	2 34 58 E	0 10 20 E	
Sens	Eur.	France	48 11 55 N	3 17 21 E	0 13 6 E	
Senones	Eur.	France	48 23 7 N	6 57 0 E	0 27 48 E	
Sheerness	Eur.	England	51 25 0 N	0 50 0 E	0 3 20 E	
Shepherd's (Isles)	Asia	Pacif. Ocean	16 58 0 S	168 42 0 E	11 14 48 E	
Shirburn Castle	Eur.	England	51 39 25 N	1 0 0 W	0 4 0 W	
Siam	Asia	India	14 20 40 N	100 50 0 E	6 43 20 E	
Si-ngham-fu	Asia	China	34 16 30 N	108 43 45 E	7 14 55 E	
Sisteron	Eur.	France	44 11 51 N	5 56 18 E	0 23 45 E	
Sligo Bay	Eur.	Ireland	54 15 0 N	9 18 0 W	0 37 12 W	
Smyrna	Asia	Natolia	38 28 7 N	27 6 35 E	1 48 26 E	
Snæsell (Mount)	Eur.	Iceland	64 52 20 N	23 54 0 W	1 35 36 W	
Soissons	Eur.	France	49 22 52 N	3 19 16 E	0 13 17 E	
Sombavera (Isles)	Amer.	Carib. Sea	18 38 0 N	63 37 30 W	4 14 30 W	
Soolo	Asia	India	5 57 0 N	121 15 30 E	8 5 2 E	
Southampton Spire	Eur.	England	50 53 59 N	1 23 56 W	0 5 36 W	
Southern Thule	Amer.	Sandw. Land	59 34 0 S	27 45 0 W	1 51 0 W	
Speaker Bank	Asia	Indian Ocean	4 45 0 S	72 57 0 E	4 51 48 E	
Stalbridge	Eur.	England	50 57 0 N	2 23 30 W	0 9 34 W	
Start-Point	Eur.	England	50 13 26 N	3 38 21 W	0 14 33 W	
Stockholm	Eur.	Sweden	59 20 31 N	18 3 55 E	1 12 16 E	
Stonehenge	Eur.	England	51 10 44 N	1 49 8 W	0 7 16 W	
Straumness	Eur.	Iceland	65 39 40 N	24 29 15 W	1 37 57 W	
Stratsbourg	Eur.	France	48 34 56 N	7 44 36 E	0 30 58 E	
Success Bay	Amer.	Terra del Fuego	54 49 45 S	65 25 0 W	4 21 40 W	
Success Cape	Amer.	Terra del Fuego	55 1 0 S	65 27 0 W	4 21 48 W	
Suez	Africa	Egypt	29 50 0 N	33 27 0 E	2 13 48 E	
Sultz	Eur.	France	47 53 10 N	7 14 32 W	0 28 58 W	
Surat	Asia	India	21 10 0 N	72 22 30 E	4 49 30 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			T.			
			° ′ ″	° ′ ″	h ′ ″	h ′
Table Island	Asia	N. Hebrides	15 38 0 S	167 7 0 E	11 8 28 E	
Tanna	Asia	Pacific Ocean	19 32 25 S	169 41 5 E	11 18 44 E	3 0
Taoukaa (Isle)	Asia	Pacific Ocean	14 30 30 S	145 9 30 W	9 40 38 W	
Tarascon	Eur.	France	43 48 20 N	4 39 36 E	0 18 38 E	
Tarbes	Eur.	France	43 13 52 N	0 3 59 E	0 0 16 E	
Tassacorta	Africa	Isle Palma	28 38 0 N	17 58 0 W	1 11 52 W	
Temontengis	Asia	Soloo	5 57 0 N	120 53 30 E	8 3 34 E	
Teneriffe (Peak)	Africa	Canaries	28 17 0 N	16 40 0 W	1 6 40 W	
Tercera	Eur.	Azores	38 45 0 N	27 6 0 W	1 48 24 W	
Texel Isle	Eur.	Holland	53 10 0 N	4 59 0 E	0 19 56 E	
Thionville	Eur.	France	49 21 30 N	6 10 30 E	0 24 42 E	
Thomas St. (Isle)	Amer.	Virgin Isles	18 21 55 N	64 51 30 W	4 19 26 W	
Thule (Southern)	Amer.	Sandwich Land	59 34 0 S	27 45 0 W	1 51 0 W	
Thury	Eur.	France	49 21 28 N	2 18 30 E	0 9 14 E	
Timor (S. W. Point)	Asia	India	10 23 0 S	123 59 0 E	8 15 56 E	
Timor Land (S. Poi.)	Asia	India	8 15 0 S	131 54 0 E	8 47 36 E	
Tobolski	Asia	Siberia	58 12 30 N	68 25 0 E	4 33 40 E	
Tolaga Bay	Asia	New Zealand	38 21 30 S	178 33 45 E	11 58 15 E	
Toledo	Eur.	Spain	39 50 0 N	3 20 0 W	0 13 20 W	
Tomsk	Asia	Siberia	56 30 0 N	84 59 30 E	5 39 58 E	
Tonga Tabu (Isle)	Asia	Pacific Ocean	21 9 0 S	174 46 0 W	11 39 4 W	
Tonnerre	Eur.	France	47 51 8 N	3 58 44 E	0 15 59 E	
Torbay	Eur.	England	50 34 0 N	3 36 0 W	0 14 24 W	
Tornea	Eur.	Sweden	65 50 50 N	24 12 0 E	1 36 48 E	
Toulon	Eur.	France	43 7 16 N	5 55 26 E	0 23 42 E	
Toulouse	Eur.	France	43 35 46 N	1 26 21 E	0 5 45 E	
Tournan	Eur.	France	48 43 57 N	2 45 15 E	0 11 1 E	
Tours	Eur.	France	47 23 46 N	0 41 32 E	0 2 46 E	
Traitor's Head	Asia	Erramanga	18 43 30 S	169 20 30 E	11 17 22 E	
Trieste	Eur.	Adriatic Sea	45 51 0 N	14 3 0 E	0 56 12 E	
Trinidad	Amer.	Atl. Ocean	20 15 0 S	126 42 0 W	8 26 48 W	
Tripoli	Africa	Barbary	32 53 40 N	13 5 15 E	0 52 21 E	
Troyes	Eur.	France	48 18 5 N	4 4 34 E	0 16 18 E	
Turin	Eur.	Italy	45 4 14 N	7 40 0 E	0 30 40 E	
Turnagain (Cape)	Asia	N. Zealand	40 28 0 S	176 56 0 E	11 47 44 E	
Turtle Island	Asia	Pacific Ocean	19 48 45 S	177 57 0 W	11 51 48 W	
Tyrnaw	Eur.	Hungary	48 23 30 N	17 33 45 E	1 10 15 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
U.						
			° ′ ″	° ′ ″	h ′ ″	h ′
Uliateah	Asia	Pacific Ocean	16 45 0 S	151 31 0 W	10 6 4 W	
Upsal	Eur.	Sweden	59 51 50 N	17 38 45 E	1 10 35 E	
Uraniberg	Eur.	Denmark	55 54 38 N	12 42 44 E	0 50 51 E	
Ushant	Eur.	France	48 28 30 N	5 4 33 W	0 20 18 W	4 30
V.						
Valenciennes	Eur.	France	50 21 27 N	3 31 40 E	0 14 18 E	
Valery St.	Eur.	France	50 11 13 N	1 37 6 E	0 6 28 E	
Vallery St.	Eur.	France	49 52 12 N	0 41 10 E	0 2 45 E	
Valparaiso	Amer.	Chili	33 2 36 S	72 19 15 W	4 49 17 W	
Van Dieman's Road	Asia	Tonga Tabu	21 4 15 S	174 56 24 W	11 39 46 W	
Vannes	Eur.	France	47 39 14 N	2 46 26 W	0 11 17 W	
Vence	Eur.	France	43 43 16 N	7 7 28 E	0 28 30 E	
Venice	Eur.	Italy	45 26 7 N	12 22 45 E	0 49 31 E	
Venus (Point)	Asia	Otaheite	17 29 17 S	149 35 45 W	9 58 23 W	10 38
Vera Cruz	Amer.	Mexico	19 9 38 N	96 0 0 W	6 24 0 W	
Verd (Cape)	Africa	Negroland	14 43 45 N	17 30 45 W	1 10 3 W	
Verdun	Eur.	France	49 9 24 N	5 22 41 E	0 21 31 E	
Verona	Eur.	Italy	45 26 7 N	11 18 30 E	0 45 14 E	
Versailles	Eur.	France	48 48 21 N	2 7 7 E	0 8 28 E	
Vienna (Observ.)	Eur.	Hungary	48 12 36 N	16 16 22 E	1 5 30 E	
Vigo	Eur.	Spain	42 14 24 N	8 28 0 W	0 33 52 W	
Vincent, St. (Cape)	Eur.	Spain	37 3 0 N	8 59 26 W	0 35 58 W	
Vintimiglia	Eur.	Italy	43 53 20 N	7 37 30 E	0 30 30 E	
Virgin Gorda (Fort)	Amer.	West Indies	18 18 0 N	64 0 0 W	4 16 0 W	
Virgin (Cape)	Amer.	Patagonia	52 23 0 S	67 54 0 W	4 31 36 W	
Viviers	Eur.	France	44 28 57 N	4 40 55 E	0 18 44 E	
Vurtzburg	Eur.	Franconia	49 46 6 N	10 13 45 E	0 40 55 E	
W.						
Wakefield	Eur.	England	53 41 0 N	1 33 30 W	0 6 14 W	
Prince of Wales's Fort	Amer.	New Wales	58 47 30 N	94 7 30 W	6 16 30 W	
Wanstead	Eur.	England	51 34 10 N	0 2 30 E	0 0 10 E	
Wardhus	Eur.	Lapland	70 22 36 N	31 6 45 E	2 4 27 E	
Warsaw	Eur.	Poland	52 14 28 N	21 0 0 E	1 24 2 E	
Westman (Isles)	Eur.	North Ocean	63 20 30 N	20 27 45 W	1 21 51 W	
Wexford	Eur.	Ireland	52 22 0 N	6 30 0 W	0 26 0 W	
Weymouth	Eur.	England	52 40 0 N	2 34 0 W	0 9 36 W	
Whitehaven	Eur.	England	54 25 0 N	3 15 0 W	0 13 0 W	
Whitsuntide (Isle)	Asia	Pacific Ocean	15 44 20 S	168 20 15 E	11 13 21 E	

The Latitudes and Longitudes of Places.

Names of Places.	Cont.	Sea or Country.	Latitude.	Longitude. In Degrees.	Longitude. In Time.	H. Wat.
			° ′ ″	° ′ ″	h ′ ″	h ′
William (Fort)	Asia	Bengal	22 34 45 N	88 29 30 E	5 53 58 E	
Willis's (Isles)	Amer.	South Georgia	54 0 0 S	38 29 40 W	2 33 59 W	
Wilna	Eur.	Poland	54 41 0 N	25 27 30 E	1 41 50 E	
Wittenburg	Eur.	Germany	51 53 0 N	12 44 30 E	0 50 58 E	
Wologda	Eur.	Russia	59 19 0 N			
Worcester	Eur.	England	52 9 30 N	2 0 15 W	0 8 1 W	
Woslak	Eur.	Russia	61 15 0 N			
Wyke Church	Eur.	England	50 35 57 N	2 28 10 W	0 9 53 W	
Y.						
Ylo	Amer.	Peru	17 36 15 S	71 13 0 W	4 44 52 W	
York	Eur.	England	53 59 0 N	1 6 40 W	0 4 27 W	
York (New)	Amer.	Jersey	40 40 0 N	74 11 0 W	4 56 54 W	3 0
Yorkminster	Amer.	Terra del Fuego	55 26 20 S	70 8 0 W	4 40 32 W	

ON THE

ORIGIN

OF

ASTRONOMY AND GEOGRAPHY.

THE chief difficulty in any elementary work of science is, to catch the ideas which lead from ignorance to knowledge; but in most works of this nature, the author seems to infer that the reader is in a considerable degree acquainted with the subject; and, while he is in the ship of science, expects that the disciple can arrive without a boat. The most profound authors are commonly the most aware of this difficulty; and the following extract, translated from Bailly's learned History of Ancient Astronomy *, will be found useful, as presenting the original ideas which led to the sciences of Astronomy and Geography.

§ 1. Few people have not been impressed with the beauty of the nocturnal firmament. The sight, fatigued with the splendour of day, wanders over the celestial vault, and enjoys the complaisance of soft repose; a deep azure serves as a foil to the enchased diamonds; the different lustre of the stars, some sparkling, others resembling glittering particles, but compensating in number what they lose in size; the gently luminous zone which surrounds the sky, and divides it into two portions; the large silver planet, which, varying in its appearance, sometimes presents a crescent, sometimes a radiant and full globe, whose soft beams delight the eye, without fatiguing it; a globe, which in size and splendour can alone be compared to the sun, advancing with equal majesty, while numerous stars disappear in the superior effulgence. Such is the spectacle presented by night, till the dawn begin to glimmer in the east; the sky reddens, and the sun springs from the horizon. All the stars disappear, he fills the entire firmament which he traverses, diffusing light and heat till he descend towards the horizon, where he terminates his course; and the grand scenes of night are repeated. Such regularity, such sublimity, joined with so much simplicity, excite the admiration of the coldest and most insensible minds.

§ 2. This phenomenon of the motion of the sun from east to west was the first observed, and was followed by that of the general motion of the stars in the same direction. All appear in the east in the evening, and advance in regular order, traversing the heavens like the sun, till concealed by the opposite horizon. The first idea was, to regard the firmament as a vast pavilion spread over a plane superficies; the next was that of an hemisphere turning upon itself with the attached stars, while the sun himself was subject to the movement. But a great question arose, what become of the sun during the night, and of the stars during the day? A considerable time was required to resolve this question; and as all depends on circumstances and means, it was even an effort of genius; nor was it completely explained till the rotundity of the earth, surrounded on all sides by the firmament, had been acknowledged. It is well known that many great philosophers seriously wrote and thought that the sun passed the night in the sea; and that the stars were extinguished in the morning, to be rekindled in the evening. It was even said, that at the moment when the sun set, a certain noise was heard as if the sea hissed, when the sun was extinguished in the descent under the waves. It is to the celebrated Greeks, and to their academies, that we owe these fond tales which shall not occupy our attention.

§ 3. It was soon perceived that the moon had a particular motion. One night she had appeared near a star, and on the following was at a distance. It was not difficult to observe that the stars always preserved the same distance, so that the motion could only be ascribed to the moon herself. Thus the knowledge of a particular motion from west to east was joined to that of the general motion from east to west: and this was the first discovery in astronomy.

The phases of the moon formed at the same time a phenomenon which attracted the attention of the first

* Paris 1781, 4to.

astro-

astronomers, but which exercised their sagacity more than the other. They began with following and studying her appearances, and the following must have been the first observations. When the moon begins to shew herself, it is in the evening after sun-set. She presents the form of a crescent, or delicate thread of light in a circular form, the convexity being towards the sun, while the points are turned towards the east. This crescent soon enlarges, and the moon at a greater distance from the sun, remains longer in the firmament. By insensible augmentation the enlightened part assumes the appearance of half a disk; and when the night arrives she then occupies the middle of the heavens. At the end of about fourteen days from her first appearance, she is opposite to the sun rising when he sets, and is full, like a disk completely enlightened, so that, incapable of increase, it must decline. The light first vanishes from that side where it first appeared, and diminishes gradually as it had increased. The moon becomes successivly like half a disk, then a crescent, more and more narrow, but with the horns turned towards the west, the convexity regarding the sun, which the moon then precedes, only rising a short time before him. Soon after she ceases to rise, she is two or three days invisible; and then re-appears to undergo the same changes.

In combining these different phenomena, it was observed that when the moon was in her greatest splendor, she was opposite to the sun; and when she was near the sun, the enlightened part was turned towards that star. It was natural to conclude that her illumination depended on the sun, and that her light was borrowed from him. As to the body of the moon, it was impossible to dispute its rotundity; and this body must either be a flat disk or a sphere, which, seen at a distance, has the same appearance. But a flat disk would not be illuminated like the moon, but entirely from the first, and only more feebly by oblique than by direct rays; while all spherical bodies are enlightened only on one side, and upon looking on the side and the front, the phases of the moon become easily explicable. It was therefore proved that the moon was a round or spherical body.

§ 4. Attentive and assiduous observers soon perceived that the spectacle of the starry heavens was not always the same. At the end of six months it is almost absolutely changed; the stars which rose at a certain hour being then ready to set, while new stars appear in the east. By means of daily attention it was observed that all the stars rise every day sooner than they did the day before, and that at the end of a month the difference amounts to two hours. This anticipation in the rising of the stars, must be the effect of some unknown motion: it was at first doubtless imagined that the firmament, the starry heaven, besides the daily motion around the earth from east to west, had another slower motion in the same direction, so as to accelerate the rising and setting of the stars. But what become of the stars that were invisible during many months, and whence proceeded the stars which began to appear on the horizon? Some remarks, accumulated by time, lessened these difficulties. It was observed that some of the stars, for example, those of the Great Bear, sometimes appeared in the east, sometimes in the west, north or south, while other stars never appeared in the north. It was inferred that the first made an entire revolution; but why should the others have a different march, or, so to speak, a particular privilege? It was even perceived, that there was one star which did not sensibly change its situation during the whole course of the night. It was as it were the centre of motion, while the others seemed to turn around it; hence the point it occupied in the firmament was called the *Pole*, and this star assumed the name of the Polar Star. Around this immoveable star, some made an entire revolution, while others only seemed to accomplish a part. More profound speculators followed these last beyond their apparition, and supplied by imagination that portion of their course which was inobservable by the eye. The firmament became a complete sphere; and as two fixed points were necessary for its motion, they supposed, in imitation of the visible pole, another fixed point diametrically opposite under the earth in the other part of the firmament; and the imaginary line which joined these two points, and around which the diurnal motion was accomplished, was called the *Axis of the Sphere*.

It had been moreover remarked that when a new star appeared, it was always in the morning, when it seemed to precede the day, and to quit the sun in order to pass before him. On the contrary, when it ceases to shew itself, when it began to escape from the sight, it was always at sun-set, and it might be judged that it was about to rejoin that star. It was, therefore, the presence of the sun which made it disappear; and on their separation depended its new appearance. Thus all was explained. The sun and the stars, when they disappeared in the west, passed under the earth to re-appear in the east. Besides, the stars and the sun were observed to have a motion by which they seemed to quit each other, and afterwards to approach. It was enquired if this motion belonged to the sun or to the stars, and it was more simple to conceive the motion of the sun, than that of a multitude of stars, which must make an equal progress. Analogy also threw light on this topic; and the motion of the moon shewed that the latter, which bore a strict resemblance, belonged to the sun.

§ 5. He who discovered the spherical form of the firmament, and the motion of the sun, made two grand steps in astronomy, for on these depend the bases of the sphere, and they disembarrass the study from many errors and absurd ideas. When we consider the epochs and the circumstances, Copernicus and Kepler, when they changed the system of the world, and the form of the planetary orbits, did not render a greater service to the science.

All these considerations on the stars, served to certify that the greater number was *fixed* in the firmament; that

that is to say, that in spite of the general motion, they preserved the same distances and the same configurations. Nevertheless, among those which by their splendour attracted particular attention, and which were styled of the first magnitude, three were distinguished, which changed their distances with regard to the rest. They had, therefore, like the moon, a proper motion, each in the same direction from west to east; but all three of different swiftness. A distinction was thus established of two kinds of stars, the first being regarded as fixed, because they seemed only to move with the firmament, and the others were called *Planets*, implying wandering stars. The three first known were doubtless Mars, Jupiter, and Saturn. A very brilliant star, which sometimes appears in the evening was also classed with the planets, having a motion with regard to the fixed stars. A second star, which appeared in the morning before sun-rise, perfectly resembling the former in lustre, and having like it a peculiar motion, was at first regarded as a different planet. The evening star was distinguished from the morning star, *Hesper* from *Lucifer*; nevertheless they were of such equal splendour, and it was so visible that the morning star completed the rout begun by that of the evening that a little time and attention evinced that these two stars were the same planet, now called Venus. Another star of much smaller size, which also appeared in the morning and the evening, was placed in the rank of planets. Thus the ancients knew seven planets, the Sun, the Moon, Mars, Jupiter, Saturn, Venus, and Mercury. They had only been observed successively, and perhaps after the elapse of many ages, above all, Mercury, which is almost always merged in the solar rays. The discoveries are here united, because some led to others, although they were separated by long intervals of time.

§ 6. The spherical form of the firmament being acknowledged, it was also natural to think that the earth was round. It was clear that it was suspended in the middle of space, because the stars passed under it. The firmament, which was believed to be solid, seemed an envelope made for the earth; and in consequence both should have the same form. Besides, the ancients, always pre-occupied with the advantages of circular forms above all others, naturally applied them to the earth and to the stars; which last they believed to be formed of a divine substance, or at least destined for the abode of gods and spirits. To this notion they were also conducted by analogy, for the moon became an example and authority for those who taught the spherical form of the earth.

It is commonly believed that this knowledge might arise in maritime countries, where it was natural to observe the successive disappearance of different parts of a ship sailing out to sea. But the discovery of the round form of the earth is doubtless anterior to the invention of ships, at least of those large enough to be perceived at a great distance. Besides, for such an argument, and such rude times, the conclusion appears to us too subtle. The observation in question may serve at present to prove the globular figure of the earth, without having first served to render it observable. Besides, the progress of the human mind is often devious, leaving for a long time a simple idea which is on its way, to seize others more subtle and remote.

Another observation shewed the roundness of the earth, that of the new stars, which became visible to those who changed their latitude, in proceeding from north to south, or the contrary. But we suspect that voyages have only confirmed this opinion, because that men, attached to their homes, to their herds and the culture of their fields, must have long existed before they proceeded to any great distance. They only left their country to fight, and only fought with their neighbours. It was necessary that commerce should open some intercourse, that war should make a wider range, and above all that philosophers and observers should navigate, for merchants and warriors seldom consider the stars. Philosophers must have observed, that on proceeding towards the south, the stars before unknown arose on the horizon, while on their return they disappeared. The sight of these stars were therefore connected with a certain position on the globe; and the convexity and roundness of the earth could alone produce this effect.

§ 7. Astronomy, by possessing some just notions of the system of the world, began to become a science. An idea of the motions of the celestial bodies began to be established. Before it had only been a subject of curiosity, but was soon to be applied to useful objects; and the progress became more rapid as interest is more active than curiosity. One of the first wants of nascent society is a measure of time. Men first reckoned by days; and some savages of America still count by suns. We have proofs that the Chaldeans computed in this manner, and that they preserved this practice, even after the conquest by Alexander, that is long after the establishment of years of three hundred and sixty-five days. The observations which they made were engraved on bricks; and it may be believed that there was one for each day, and that the time was calculated by the number of the bricks. But this manner of reckoning was not found convenient in daily practice, because the days in a short time became too numerous. A longer period was wished; and the motion of the moon with regard to the stars offered one of about twenty-eight days, while the phases of that planet indicated a subdivision in four parts, or weeks of seven days. Goguet thinks that they were the first measure of time, but it is evident that they are only subdivisions, and of an invention posterior to the observance of the lunar revolutions. Yet as the motion of the moon with regard to the stars demanded observation, in common practice the return of the phases was preferred; and upon the motion of this planet with regard to the sun, months of thirty days were established.

The Neomenia, or the feast which is celebrated among almost all nations at the time of the new moon, is a proof that they are attentive to the return of that planet; and they have added festivals from different motives, in order that the observations should not be neglected. When the motion of the sun became known, it was seen that there was a far longer interval between the moment when a star disengages itself in the morning from the solar beams, till the moment when, after being again merged in them, it

it begins to re-appear. This interval was called the revolution of the sun; and men began to reckon by years *.

Many nations have long preserved the practice of beginning their year at the rising or setting of some brilliant star, as Sirius or the Pleiades. But as the motion of the sun was not measured as soon as it was perceived, an approximation only was demanded. This was accomplished by the re-union of twelve lunations, which elapsed in a revolution of the sun to compose a lunar year. Although the months had been at first of thirty days this year was only of three hundred and fifty-four days, because they did not delay to rectify, by the observation of the Neomenia, the too great length of the months; and they were alternately estimated at twenty-nine and thirty days to complete the revolution of the moon, which employs about twenty-nine days and a half. This year long existed among nations, whose mode of life did not permit the acquisition of more exact knowledge; and it is sufficient for the occasions of those who, like the ancient Arabs and Tatars, only live on the flesh and milk of animals; nay the wandering Arabs and Tatars still follow this usage. In fact this form of the year is very convenient for people in that state of society; the observation of the moon, which is very visible and easy, dispensing them from any necessity of a calendar.

§ 8. In the commencement of society there were only hunters and shepherds, but when the increase in number rendered it difficult to procure food, recourse was necessarily had to agriculture. It then became indispensable to know and foresee the return of the seasons; and agriculture enforced astronomical observations. It was remarked that the vegetation of plants and trees, the maturity of fruits and grains, depended upon the action or upon the presence, more or less prolonged, of the sun upon the horizon. At the time that the days became equal to the nights, the verdure re-appeared, and in consequence the culture of the soil ought to precede that epoch. When the days are the longest it is the season of harvests, which are performed successively till the nights become equal to the days. This season is that of labour and sowing the seeds, till the lengthened nights bring back the time of inaction and repose for man and nature.

These intervals were distinguished and called *seasons*. At the same time doubtless the year of three hundred and sixty days was established; and as it had been remarked that during the course of the year and the seasons, new stars daily emerged in the morning from the rays of the sun, the most brilliant were chosen, as being those the most easily perceivable in the dawn, and they were regarded as signals, which indicated the time and season proper for each agricultural labour. It only remained to connect the agronomical observations with those of the heavens; and thus the first farmers were necessarily astronomers. When the most proper stars had been chosen for the different indications, each watched on his side to seize the moment of their appearance. It was not till a long time after, when individuals in a more numerous society had divided their occupations, that there were men particularly charged with this office, who from a tower, as in Chaldea, observed the stars which appeared on the horizon, and, as in Egypt, announced them to the people by hieroglyphical signs.

§ 9. The year of three hundred and sixty days could not have been long established, for in less than thirty-five years the order of the seasons would have been absolutely reversed, and winter would have fallen into the months of the original summer. The first expedient must have been intercalary months, but it was afterwards thought necessary to study more minutely the revolution of the sun, which might be done by different means, by the return of the heliacal rising of the same star, or by the time when the sun returns to the same meridian height, which is marked by the gnomon; or rather, as Goguet conjectures with much verisimilitude, by the points of the horizon where the sun rises and sets. "It appears to me probable," says he, "that the length of the year may have been at first determined by the observation of the rising and setting of the sun, at certain points of the visible horizon. Men in an early stage of society pass a great part of their life in the fields; and about the time of the equinoxes may have remarked a particular tree, rock, or hill, behind which they saw the sun on such a day of such a month. On the morrow they must have seen that star rise or set pretty far from the same spot, because, at the equinoctial season, the declination of the sun sensibly changes from day to day. Six months afterwards they must have seen the sun return to the same point, and in like manner, at the end of twelve months. This manner of estimating the year is pretty exact, and at the same time very simple. Any person may make the same observation; but, I confess, that I find no trace of it in history." Rudbeck informs us, that the ancient Swedes regulated in this manner the length of their year: and Goguet appears not to have known a passage of Simplicius, who says expressly that it was by observing the different points of the horizon, where the sun sets in summer and in winter, that his motion was estimated. Nor has Goguet perceived the fertility of this idea; for it explains how men might have divided into four equal parts, without having recourse to the observation of solstices and of equinoxes, by the meridian height of the sun, a method which must for a long time have been beyond the extent of their knowledge: and it also well explains why some nations have had years of three and of six months, of which it would otherwise have been difficult to fix the term and the duration. From Censorinus it even appears that the Carians and Acarnanians counted their year from one solstice to another;

* When a star appears in the morning towards the east, an instant before the rising of the sun, or in the evening to the west, an instant after sun-set, it is said to rise or set *heliacally*. These heliacal risings and settings regulated the labours of agriculture, and the ancients were of course attentive to their observation. This phenomenon is intended when we speak of the rising and setting of the stars.

for

for alternately the days increased during one year, and during that following were on the decrease.

§ 10. In adopting the revolution of the sun for the measure of time, the necessity of subdivisions occasioned the preservation of the two other measures, the months and the days, but these subdivisions were not exact. The true length of the solar year is about three hundred and sixty-five days and a quarter: and it includes more than twelve, and less than thirteen revolutions of the moon. Some one imagined he would find an interval of time, which would include a number of complete revolutions of both; and this interval of time having expired, it must happen that the revolutions began together, the aspects became the same; and successively in the same order. This period was computed, either by the tedious method of observations, or by calculations of the motions of these stars: but the last plan was subject to errors. Hence arose different periods, sometimes defective, sometimes better calculated, according to the more or less exact knowledge of these motions.

§ 11. As soon as there were in a nation men devoted to astronomy, either by the motive of being useful to their fellow citizens, in announcing the appearance of the stars, or by laudable curiosity, then astronomy was introduced, and began to become an art; while their meditations might produce some fruit because they were founded on facts. In examining with more attention the daily motion of all the stars, it was observed that the point of their greatest elevations divided into two equal parts the interval between their rising and setting. It was discovered that the points of the greatest elevation of each of these stars were in a circle perpendicular to the horizon, passing through the zenith and the pole of the world. The sun himself was also there at the time of his greatest height, being the middle of his course and of the day. This circle, merely fictitious, was called the *Meridian*.

§ 12. The greatest altitude of the stars is always the same; but this is not the case with the planets, and above all, the sun, whose elevation being higher in summer, and lower in winter, must have been soon observed. It was proper to study the variations of these altitudes of the sun, and to mark the differences, but astronomy has not as yet imagined the means. A man of talents found it by the simple observation of the shadow which the Sun projects behind the bodies which he enlightens. He observed that this shadow, becoming shorter in proportion as the sun was elevated, was proper to mark the progress of that elevation; and he produced a revolution in the science by the invention of the most simple, and the first of all astronomical instruments, the gnomon. The unknown inventor rendered two great services to astronomy, the first by the invention of an instrument which afforded more exact observations; the second by a method which required a series of observations on which is established their practice. He doubtless ordered a column to be constructed, or a high pillar; that the shadow might be larger, and the variations the more perceivable. He taught that every day the shortest shade should be marked and measured; and that a series of these observations would disclose the motion of the sun from the horizon to the pole. This motion from low to high, and from high to low, was stopped and changed twice in the year, These changes were called *conversions*, *tropics*; and the points where the sun stopped before altering his course *solstices*. These objects were to become the study of successive ages.

§ 13. The first idea which presented itself, in explanation of this diversity of the heights of the sun, was that this star, besides a particular motion from west to east, had another which bore it from low to high, and from high to low, sometimes approaching, sometimes leaving the pole. A similar variation still more sensible had been perceived in the altitudes of the moon. Yet the admission of these two motions presented some difficulty to the ancient philosophers, who had their prejudices as we have ours, and who by chance, as has also happened more than once among the moderns, drew very just conclusions from a false supposition. The daily motion from east to west is uniform, and visibly in circles; and it was thence concluded, that motion in a circular line, and uniformity were fundamental laws of nature. Not that motions in a right line had not been observed; but they were far from the sublime idea of reducing both to the same principles. The celestial motions formed a separate class, as having something divine in their circular and uniform march. This progress appeared to the ancients worthy of the simplicity of the first cause; for all studious and enlightened nations, whatever be their religious and metaphysical ideas, or their opinions on a productive cause, whether intelligent or only active, have been led to believe that this cause, infinitely wise, or infinitely powerful, did not act but by the most uniform and least complicated means, joining to the magnificence of the work the simplicity of the execution.

Now the motion with regard to the poles, deranged all these ideas. In the *first* place, the supposition of a body obeying two motions at the same time, was not simple; and how conceive that these two motions did not injure each other? *Secondly*, the motion with regard to the poles was not circular, or, at least the sun stopped at a certain distance from the pole; to return to his former path, and this march is not uniform. The ancients, without knowing the laws of motion, saw that motion could not be stopped and changed into a contrary motion, without a constraining cause. Thus the Greek philosophers, systematic to excess, and always desirous of reasoning and of explaining what they did not exactly know, imagined that the air was more thick and more dense about the poles, and that the sun not being able to penetrate was obliged to return! In Chaldea and in Egypt they were not so eager to discover causes, but, in appearance, effects were better studied. In fine, genius or chance, and perhaps both together, discovered the explanation so long time desired. It was observed, that by inclining the route of the sun with regard to the poles, all the appearances might be explained, and that the sun would only have a circular and uniform motion. The circle which he thus describes in his oblique course was afterwards called the *ecliptic*. This simplification satisfied the ancients, who had been embarrassed by the two motions

lent at the same time to the sun and to the moon. This discovery was celebrated as it deserved. In speaking of Anaximander, to whom the Greeks, so new in the world, dared to ascribe this discovery, Pliny says that he had opened the career of astronomy. In effect, this knowledge is the foundation of all the rest, and the first necessary step in the science.

Afterwards many objects of research presented themselves to the mind. The diurnal circle was observed which the sun describes at the two seasons of the year, when the days are equal to the nights. This circle was called the *equator*, either on account of that equality of the days and the nights, or from the knowledge that all the stars and planets placed in that circle remained on the horizon precisely the half of a diurnal revolution, that is twelve hours. The points where the equator intersects the route of the sun retained the name of *equinoxes*.

The equator was therefore the second circle of the sphere. The ancients thus familiarised themselves with imagining fictitious circles in the firmament; but it was difficult that the eyes should follow the imagination in fixing their position. This object was attained by a happy invention, that of large circles of copper, exactly arranged according to those imagined in the heavens. It was perceived that when these circles should be exactly directed and firmly fixed, it would be easy to mark the stars which were upon the equator, or above, or beneath, and at every moment those that passed the meridian. It is only necessary to direct the visual ray along the surface of one of these circles, and to prolong it to the firmament. There was therefore raised, perpendicular to the horizon, from south to north, a circle which was called the meridian, as it was in the direction of the celestial meridian. Another was applied at right angles, which was called the equator. The greatest difficulty was to adapt this instrument precisely, that is to say, to place the verticle circle of copper in the exact direction of the celestial meridian. But as all the ancients had observed that this circle marked the spot where the stars attained their greatest altitude, it was easy to follow some beautiful star, and to fix the instrument to the place and moment where it stopped its elevation. This method is not very exact; but such as it is we believe that it may have been sufficient in the early state of astronomy, and might still produce many discoveries. Yet we have reason to think that use may have been made of a better and surer method, that of equal altitudes before and after noon; for the ancients certainly knew that, at equal distances from both sides of the meridian, the altitudes of the same star are equal. Having fixed, some time before noon, the length and direction of the shadow, they waited till the sun passed the meridian, and the shadow had returned to the same length; then a line of direction was drawn of this shadow, which forms an angle with the direction of the first; and the line which divides this angle into two equal parts is in the precise direction of the meridian. It is the more likely that the ancients might use this method, as, according to the testimony of Gentil, who resided long in India, the Hindoos have preserved it, and still make use of it in placing their temples and pyramids.

§ 14. This instrument enabled astronomers to make an infinite number of observations. On the meridian was marked the point to which the sun ascends at the summer solstice, and also that to which he descends at the winter solstice; the interval between these two points measuring the motion of the sun with regard to the poles. This interval was found to consist of eight parts of a circle, divided into sixty parts according to the practice of the time; and as the equator equally divides that interval, the obliquity of the route of the sun with regard to that circle was of four parts, or the fifteenth part of a circle, in short, twenty-four of our degrees. This instrument by its equator divided the firmament into two hemispheres, and served to distinguish the stars into northern or southern with regard to the fixed circle to which they were referred. Names had already been given to the most beautiful stars; but when it was necessary to determine the portions of the firmament, and of the stars, among which lay the path of the sun, there was as much embarrassment as for the meridian and equator. Recourse was had to the same expedient, that of adding to the instrument a new circle placed in the direction of the ecliptic; but this circle could not be fixed, because the diurnal motion was accomplished around the poles of the equator, the ecliptic changing its position every moment with regard to the horizon and the meridian. It was therefore necessary to make some changes in the instrument. The meridian was left fixed; but there was added to the equator a new circle, which formed with it the same angle as the ecliptic: and by the poles, and the points of the equinoxes and solstices, two other great circles were raised, which were called the *colures* of the equinoxes and solstices. These four circles, re-united and fixed in the meridian, were rendered moveable around an axis directed through the two poles of the world. Such was the first model of the *armillary sphere*, and of the *armillas* of Alexandria. Whether this sphere, executed on large dimensions, were made in imitation of a smaller and portable sphere, such as those of Atlas and Chiron; or, on the contrary, this portable sphere were constructed after the other, which was confined to observatories, it is certain that one or other of these spheres is of the highest antiquity.

Such, if we believe the Chinese annals, was the progress which astronomy had made two thousand seven hundred years before the Christian epoch, and in Egypt, more than three thousand years before that epoch, if we believe the conjectures and calculations which I have made in the preceding book.

§ 15. In proportion as the instruments were perfected, their uses increased. This new sphere offered a great number; but it was necessary to establish a correspondence between the sphere of brass and the celestial sphere, and to assign the points of connection. It was first necessary to fix the equinoctial and solstitial points, which, I imagine, might be done in this manner. At the time of the longest nights, the day of the winter solstice at the moment of sun-set, the point of

winter

winter solstice on the instrument was brought to the point of the horizon, where the sun-set, and the stars were observed which were at the distance of a hundred and eighty degrees, and, in consequence, corresponded with the summer solstice. Besides, as the stars are not visible to the naked eye till some time after the setting of the sun, and as it was not possible to direct the instrument towards an unseen star, another expedient was devised, and the moon was used for an intermediate observation. Having directed this point of the winter solstice to the spot of the horizon where the sun set, they must have remarked to what point of the ecliptic the moon then answered; thus immediately after sun-set, when the stars had begun to appear, the point thus marked would be anew directed to the moon, and at the same instant must have been observed to what stars corresponded the summer solstice, and the spring equinox, then upon the horizon. It was at the same time determined to what points of the equator the most beautiful stars answered, to serve as indications when they wished to know the positions of the other stars, and of the two points of the winter solstice and autumnal equinox. These points give a natural division of the year into four parts or seasons. There were also joined the different terms of the year indicated by the rising and setting of the stars; or, to speak with more exactness, these different terms were connected with the points of the equinoxes, or of the solstices which were regarded as fixed. It was said, Sirius rises four days after the summer solstice; the Pleiades rise on the very day of the equinox, &c. Observations on the rising and setting of the stars were multiplied; and *calendars* were composed, which served to regulate the labours of agriculture.

§ 16. When the ecliptic or route of the sun became known, it was perceived that the moon and the other planets followed nearly the same course, only leaving it a few degrees above or beneath. In consequence, a zone of sixteen degrees was imagined, of which the ecliptic occupied the middle, and which was called the *zodiac*. The motion of the moon offered an easy mean of dividing it into parts; and this division seems to have been the first, because one may easily follow the progress of the moon, and, in marking every night the stars with which this planet corresponds, the zodiac was found divided into twenty-seven parts and one-third, whence some have formed twenty-seven *constellations*, others twenty-eight. The sun cannot be thus followed in his course through the stars, nor can it be perceived that he has changed his situation, except from the stars which emerge from his beams in the morning, or those which immerge into them in the evening. These phenomena, whence the circumstances of the course of the sun have been deduced, have demanded combinations and meditations; while the naked eye, without the assistance of any instrument, was sufficient to observe the motions of the moon, and the divisions of the zodiac arising from that motion. When the revolution of the sun and the length of the year were known, the twelve months offered a new division of the zodiac into twelve parts.

It had already been divided into four by the solstices and the equinoxes, so no more was necessary than to divide, by means of the instruments, the intervals into three parts, which were called *signs*. This method of dividing the zodiac appears far more natural, and it is surely more precise than that which Sextus Empiricus, and Macrobius have described. But it is not impossible that their method, by the fall of water, should have belonged to a more ancient astronomy not possessed of more exact methods.

A figure was drawn which comprehended all the stars in each sign. This figure and the stars thus reunited, were called a *constellation*. Though these figures were at first only lines drawn from one star to another, when names were to be imposed, they were those of animals, whence the zone which comprises them derived its name of *zodiac*, from a Greek word signifying an animal. It may be concluded from this etymology, that these signs, which are now designed by figures of men or other objects, are posterior changes or inventions. The twelve signs were originally all marked by animals, and probably the same which still designate in Asia the years of the period of twelve years; a period which, in all that part of the world, is of the highest antiquity.

The idea of drawing figures, in order to class the stars, was extended to the rest of the firmament, which was peopled with animals and different figures; but we believe that men were not placed there till astrology pretended that their destiny was written in heaven; and it appeared natural to place man in the greater part of the celestial regions, which was supposed to have so much empire over him. Besides, astrology wished to mark, by the attributes and by the attitude of the men there drawn, the influence which such or such a constellation might effuse, and the inclinations with which it might inspire individuals at their birth. These figures of men were at first nameless; and it was in more modern times that the vanity of the Greeks imagined the apotheosis of their heroes in the firmament, and the consecration in that eternal book of their names to posterity.

§ 17. The method of indicating the time of the equinoxes and of the solstices, by the rising or setting of some beautiful star, led to an important discovery. The times of the equinoxes and the solstices were still observed, either by certain known points of the horizon where the sun there rose and set, or by the length of the shadow at noon. The ancients had connected these different remarks, having observed, for example, that at the rising of some beautiful star, announcing the summer solstice, the sun must arise at such a point of the horizon, and that the shadow at noon ought to have a certain determined length. In assiduously repeating these observations every year, it was perceived after some ages that they no longer coincided. When the star appeared, the sun did not rise to the same point, and the length of the shadow exceeded the former measure. This last character belongs so visibly to the solstice, that they were forced to conclude that

the star had changed its place in the firmament. The ecliptic circle of copper in divisions, and the sphere which we have described, proved the means of evidencing this discovery. They had been used to fix in the starry heavens the spots of the equinoctial and solstitial points. It was perceived that the stars no longer answered to the same points of this circle, and that they seemed slowly to advance along the ecliptic. But as this motion was general and the same for all the stars, and as they preserved the same order and the same configurations among themselves, so much uniformity could not be the effect of particular motions; and this general and uniform motion seemed to belong to the firmament itself where the stars were fixed. The ancients thus imagined a sphere, under the name of *Primum Mobile*, which, besides the daily motion which conducts the stars from east to west, had another contrary and very slow motion from the west towards the east.

§ 18. The knowledge of the four points of the equinoxes and solstices gave room to remark that the sun did not perform an equal course during the four intervals. The star which regulates the seasons, the father of nature, and the sovereign of the firmament, was therefore unequal in his progress! This circumstance did not deprive him of his divinity, and he nevertheless preserved the intelligence which presided over his course. The ancients, more curious in facts than in explanations, do not seem to have enquired the cause of this inequality, nor the manner of reconciling it with the uniformity of circular motions, which they regarded as a general constant principle. Submissive to evidence, though attached to the ideas of their ancestors, they preserved prejudices because they were old, but admired the truth when it was demonstrated. This discovery was confirmed by a like inequality in the return of the phases of the moon. Particular attention had always been paid to these phases, as well for the measure of time and the celebration of the periodical festivals, as in the superstitious fear of *eclipses*, which had for a long time fixed the attention of mankind. We are here forced to return in order to resume the chain of ideas.

Eclipses, above all eclipses of the sun, at first occasioned great terror. The loss of light seemed to threaten the extinction of nature; and if we be entitled to blame the nations, still tormented with these fears as ignorant or stupid, it would be unjust not to grant that the first eclipses must have produced a terrible impression. They must have been often repeated before men could be convinced that they had no dreadful consequences; and that they showed in their return an order, a succession which ranked them in the number of natural phenomena. The Chaldeans, who watched without ceasing in the study of the heavens, and whose astronomers relieved each other successively like centinels, must have permitted few eclipses to pass without observation. The first object of enquiry was the cause; and that of the eclipses of the sun must have been the first discovered. As soon as this phenomenon was understood to have a natural and regular cause, it was easy to comprehend that an opake body alone could thus intercept the rays of the sun. As it was known that the moon was an opake body, having no light except what she received from the sun; as the moon had been seen to approach that star, and to lose herself in his beams a short time before the eclipse, and disengage herself from them soon after; it was natural to conclude that the moon was the obstacle which deprived us of the light of the sun in the whole or in part. But what was the body which deprived the moon herself of her light, and eclipsed her when opposite to the sun she was in her greatest splendour? The effect of the same cause was acknowledged, the passage of an opake body, which, by degrees, precluded her light, restored to her after a longer or shorter interval. Some nations even imagined globes expressly made for the purpose of eclipsing the sun and the moon; but a few reflections upon an effect which may be daily perceived discovered the cause. Every enlightened body throwing a shade behind it, the shadow of the earth ought, in consequence, to be directed opposite to the sun; and as the moon turns around the earth, she must be eclipsed in plunging into that shadow, which deprives her of the light of the sun. Thus the cause of the eclipses both of the sun and moon became known. The observation of the eclipses of the moon, and the knowledge of their causes, confirmed a discovery already made. It was observed that the shadow of the earth, visible on the enlightened disk of the moon, was round: and this observation shewed that there was no deceit in the supposition that the earth was spherical. But why should the moon, which passes every month between the sun and the earth, is every month opposite to the sun and in the neighbourhood of the shadow of the earth, not occasion every month an eclipse of the sun, and suffer herself an eclipse? This question was natural, and must have presented itself at the first, but offered a difficulty, which, perhaps, occasioned some hesitation concerning the explanation of the doctrine of eclipses already mentioned. The solution was not obtained till the latitude of the moon, or its distance from the ecliptic, had been discovered.

§ 19. This planet describes a circle inclined to the ecliptic; and she wanders sometimes a little more than five degrees either to the north or to the south of that circle. As her course is inclined, it follows that it must intersect the ecliptic at two points; these two points of the orbit of the moon were called the *nodi*, *nodes*, or *knots*; and it was perceived that the eclipses did not happen except when the moon was in these intersections, or, at least, when she was not far distant. The course of the sun received in consequence the name of ecliptic. At this period seems to have been demonstrated the necessity of the fixed and armillary sphere, which we supposed to have been invented before. For it may be asked, how could the ancients perceive that the moon wandered from the ecliptic, if they had not had a circle of copper always placed in the direction of that celestial circle, and to which they might refer the position of the moon in the heavens? How otherwise could they have discovered that eclipses did not happen

happen except near the intersections of the orbit of the moon and the ecliptic, or in these intersections themselves?

§ 20. When it was known that eclipses were natural phenomena, often revolving in the same year, curiosity was displayed in the observation, and in preserving their memory in order to discover the rule of their return. Nor was more minute attention wanting on the time of the day or night that they happened, and the part of the moon eclipsed. Sometimes when the eclipse was not total, the extent of the part eclipsed was compared with the whole. The new and full moon was sedulously observed that no eclipse might escape notice; and it was by the observation of these phases that the first knowledge was obtained of the revolution of the moon with regard to the sun.

§ 21. The ancients arrived at a more exact knowledge of that revolution, in measuring daily upon their ecliptic the distance of the sun from the moon. These first decisions were no doubt infected with great errors; but as they accumulated, the errors were divided through a larger number, and the determination became more exact. In continuing these observations, with a constancy only to be found among orientals, they perceived that the revolutions of the moon were sometimes more long, and sometimes more short; and that even the interval between the conjunction and opposition was scarcely ever equal to half a revolution.

They determined the period of this inequality. Whatever was their method, it no doubt enabled them to determine with more facility the time when this inequality was the greatest. Hence the time when this greatest inequality returned a second time indicated the duration of that period. They also remarked that eclipses did not happen at the same points of the ecliptic; and it necessarily followed that these points or the nodes had changed their places. These nodes therefore had a motion, and in consequence the period of the return of the moon to one of these nodes was not the same as that of the return of the moon to a given point of the zodiac. The ancients knew this period, which they called the revolution of latitude; as they had known that of the inequality by their constancy in the study of the heavens. A long train of observations enabled them to find grand periods, in which the moon made a number of entire revolutions, relative to its inequality, the nodes, and the sun. They proceeded even so far as to bring back the moon to the same point of the zodiac, or at least to determine the number for a complete revolution, and how many degrees were wanting that she might attain, at the end of the period, the point of the zodiac when she started at its beginning; an object which the ancient astronomers could not have obtained, if they had not had the divided ecliptical circle, of which we have already supposed them in possession, and to which they might refer the daily motion of the moon. The wide interval of these observations, and the length of these periods, gave with much exactness the length of each revolution; and it follows that the moon, was of all the planets, that of which they best knew the motion, while in modern ages it was for a long time that of which the motion was the least known. Its theory was the most easy to sketch, because its motions are rapid but it is more difficult to examine profoundly, because the variations and the inequalities are more considerable and more multiplied.

§ 22. Among these periods some were found which bore back the eclipses of the moon, of the same extent, to the same points of the firmament, and the same days of the year; and such periods were used to foretel these eclipses. As to the eclipses of the sun, irregularities were remarked which led to a despair of regulating them by any constant rule, nor was a period observed which could reduce them to the same days. this was the effect of the parallax, which remained unknown for a long time after. It would even appear that the observation of those eclipses was abandoned; for among the eclipses observed by the Chaldeans, which Ptolemy has transmitted to us, there is not one eclipse of the sun. This is a loss which we would the more regret, if a greater number of both had reached us. The cause of this loss was the prejudice, that these phenomena did not follow any certain rule, whence it was concluded that the observation was useless; and this may convince us, that in the study of the heavens, and of nature in general, we ought not to reject any observation nor any experience, for the time may arrive when they will be found useful, and we shall have planted for posterity.

§ 23. As to the other planets, their less remarkable appearance, and less sensible motion, must have excited later attention. The most brilliant, Jupiter and Mars, were without doubt the first observed. Their course was followed, and it was soon perceived that there was a time of the year when their motion slackened, then entirely stopped, and in fine became retrograde; till, slackening and stopping a second time, it again became direct. By direct motion is here implied that which is performed from west to east, or in the same direction of that of the sun and moon, while the retrograde motion is the contrary. The ancients, seeing that these strange appearances were periodical and annual, employed themselves in the observation, waiting till more intelligence should be able to explain them. They carefully marked the moment at which these planets yearly became stationary, and the period of their motion whether direct or retrograde. These observations, though inaccurate, were useful in the end. The apparitions of planets appeared to the ancients equally worthy of observation. They understood by the time of apparitions, that in which the planets disengaged themselves from the rays of the sun, and became visible in the morning a little before day-break. In speaking of the stars, that is called the heliacal rising. The assiduous observation of the rising of the stars ought naturally to have led to that of the apparition of the planets; and it was remarked that these apparitions, like the risings of the stars, did not happen at the same periods of the year, and that the phenomena of stations and retrogradations did not happen in the same sign, but successively in the different signs of the zodiac. In fact, only a few months were required to evince that Mars changed his place in the firmament, and did not correspond

correspond with the same sign of the zodiac. Jupiter also was every year in a new sign: while Saturn, whose motion is more slow, pervades the same space in two or three years. Two motions, or two revolutions, were therefore recognized in each of the planets, one with regard to the sun, the other with regard to the zodiac. The planet, Jupiter, for example, performs his revolution with regard to the sun in about thirteen months, that is to say that thirteen months elapse between one apparition and another, while his revolution with regard to the zodiac is not completed in less than eleven years and ten months. The ancients in like manner perceived that Mars employed little more than two years, and Saturn somewhat more than twenty-nine years, in pervading the entire zodiac.

§ 24. Saturn is the least brilliant of all the planets. He moves the most slowly, and appears in consequence to have the greatest circle to run, whence he was judged more distant than all the rest. Next were placed Jupiter, Mars, the sun and moon, each according to the degree of their swiftness, all these planets describing circles around the earth. Such was the system of the ancients, more known under the name of Ptolemaic. But the two other planets, Venus and Mercury, threw embarrassment and uncertainty into this arrangement. They were sometimes seen to precede the sun, and shew themselves in the morning before he arose, or to follow him and shine in the evening after he set. They were however seen to correspond successively with different signs, and different degrees of the zodiac, and not return to the same points till about the end of a year. These planets were therefore similar to the three others; and had, like them, two motions; one with regard to the zodiac, which was accomplished precisely in the time of a revolution of the sun or of a year, the other with regard to the sun itself. They had their stations and retrogradations. But the question was, to assign to these planets their proper place in the system of the world, and to know if they were nearer or further from the sun than the earth. The rule which had been followed for the three others here failed, because these two planets seemed to have the same swiftness with the sun in the zodiac, and it was only certain that they were more distant than the moon. This question was so difficult to resolve that debates arose. Some placed them above the sun, others beneath. Nevertheless it was observed that the splendour of Venus, sometimes seen on the right of the sun, sometimes on the left, was subject to some variations, and there were times, when although visible, equally distant from that star, and equally emerged from his beams, she was much less brilliant. The example of Saturn, whose light is more feeble and dull, because his distance is greater, led to think that Venus, perhaps, was not always at the same distance from the earth.

It was imagined that she might be sometimes more distant, sometimes nearer than the sun. From these four circumstances re-united, from Venus and Mercury on the right and left, above and below the sun, the two first being facts, and the two others very probable conjectures, they dared to conclude that the orbit of these two planets enveloped the sun, and that they turned around him; we say that they dared to conclude, because this assertion was very new and very bold for the time. A man of genius alone could conceive it; and, after profound meditation, infer that he had foundations to support it. But this idea was not general, being on the contrary peculiar to one people, the ancient Egyptians. This just idea must however at least have appeared happy, for it explained in the simplest manner the stations and the retrogradations. When the visual ray forms a tangent with the circle, which these planets describe round the sun, their motion being no longer sensible, they must appear stationary; and this happens twice in each revolution. In the superior part of their orbit they proceed in the same way with the sun, and appear direct; while in the inferior part, their opposite course must appear retrograde.

§ 25. Some philosophers proceeded still further, and acknowledging that these two planets turned around the sun, they thought that he must also be the centre of the world, and supposed that all the planets and the earth itself moved around that glorious body. Others even imagined that the diurnal motion of the stars and planets was only an appearance, caused by a rotation of the earth around its axis. But these bold and merely philosophical ideas were not supported by facts among the ancient nations known to us; though perhaps we may be able to shew that they are the vestiges of higher antiquity, and of a science brought to perfection *. In posterior ages, if some hints of analogy occasioned them to be adopted for a moment, if some philosophers caught them by a kind of instinct in discovering truth, they were too contrary to appearances not to be speedily rejected.

* A favourite dream of Bailey.

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MODERN GEOGRAPHY.

PRELIMINARY OBSERVATIONS.

DEFINITIONS.] THE word *geography* is derived from the Greek language, and implies a description of the earth. It is sometimes contrasted with *hydrography*, which signifies a description of the water, that is of seas, lakes, rivers, &c., thus including marine charts: but, in general, hydrography is rather regarded as a province of geography. Both were anciently considered along with astronomy, as parts of *cosmography*, which aspired to delineate the universe.

Geography is more justly contrasted with *chorography*, which illustrates a country or province; and still more with *topography*, which describes a particular place, or small district.

What is called General Geography embraces a wide view of the subject, regarding the earth astronomically as a planet, the grand divisions of land and water, the winds, tides, meteorology, &c., and may extend to what is called the mechanical part of geography, in direction for the construction of globes, maps, and charts.

Among the other divisions of this science may be named Sacred Geography, solely employed in the illustration of the Scriptures; Ecclesiastic Geography, which describes the government of the Church, as divided into patriarchates, archbishoprics, bishoprics, archdeaneries, &c. with their respective boundaries, often varying much from those of the secular provinces; and Physical Geography, or Geology, which investigates the interior of the earth, so far only as real discoveries can be made; for what have been styled systems of the earth, which have consumed the labours of many ingenious men, have no connection with the solid science of geology, but ought rather to be styled cosmogonies, or ideal creations of planets.

But Geography, popularly considered, is occupied in the description of the various regions of this globe, chiefly as being divided among various nations, and improved by human art and industry. If a scientific term were indispensable for this popular acceptation, that of Historical Geography might be adopted, not only from its professed subservience to industry, but because it is in fact a narrative so nearly approaching the historical, that Herodotus, and many other ancient historians, have diversified their works with large portions of geography, and the celebrated description of Germany, by Tacitus, contains most of the materials adopted in modern treatises of geography.

DIVISIONS OF GEOGRAPHY.] In this popular point of view, historical geography admits of three divisions. 1. The Ancient or Classical, which describes the state of the earth, so far as it was discovered at different periods, but not extending further than the year of Christ 500. 2. That of the Middle Ages, which reaches to the fifteenth century, when the discoveries of the Portuguese began to lay wider founda-

tions of the science. 3. Modern Geography, the sole subject of the present work, which, while it embraces the most recent discoveries, still remains capable of great accessions, particularly in Africa; not to mention more minute deficiences.

The chief object of modern geography is to present the most recent and authentic information concerning the numerous nations and states who divide and diversify the earth; but on this subject it is impossible to attain accurate ideas without a brief introductory view of the progress of each nation and state. Though, in some few instances, natural barriers have divided, and continue to divide, nations, yet in general the boundaries are arbitrary, so that the natural geography of a country, though forming an essential feature, hitherto treated with too much neglect in geographical works, cannot be admitted to a predominance; but on the contrary, as matter yields to mind, may rather be regarded as a sequel in historical geography, which is chiefly occupied in describing the diversities of nations, and the conditions of the various races of mankind. On this subject there is no doubt room for a variety of opinions; but after long consideration it has appeared most eligible to prefer the following order:

ORDER OF TOPICS.] 1. The historical, or progressive geography of each country. 2. Its political state, including most of the topics which recent German writers, by a term of dubious purity, call statistic. 3. The civil geography, including objects not so immediately connected with the government, as an account of the chief cities, towns, &c. 4. The natural geography [1].

QUARTERS OF THE WORLD.] The ancients considered the earth under the three grand divisions of Asia, Europe, and Africa; yet, as they all form one continent, the distinctions were arbitrary, as they often included Egypt under Asia, and they had not discovered the limits of Europe towards the N. E. Modern discoveries have added a fourth division, that of America, which exceeding even Asia in size, might perhaps as well have been admitted under two grand and distinct denominations, limited by the Isthmus of Darien. It was supposed, till within these thirty years, that there existed a vast continent in the south of the globe, and many schemes were formed for colonizing the wide and opulent *Terra Australis*; but the second navigation of the immortal Cook dispelled this visionary land from geography, or demonstrated, that if any continent there existed, it must be lost in the uninhabitable ice of the south pole. Yet the wide extent of New Holland rewarded the views of enterprise. Too large for an island, too small for a continent, New Holland, like the other works of nature, eludes the petty distinctions of man; and while geographers hesitate whether to ascribe it to Asia, or, with De Brosses, to denominate it a FIFTH specific division of the earth, it is not improbable that the popular division of four quarters of the world will continue to predominate over any scientific discussion [2].

[1] This arrangement was in part suggested by the *Essai sur l'Histoire de Geographie* by Robert de Vaugondy. The plan of this work has been generally approved on the Continent as well as in England, though some readers incline to think that the fourth article should be the first; in which case they may read the fourth chapter before the others, of which the succession has not yet been arraigned. In a map of any country (and maps form the chief base of geography in a strict sense of the term) the firſt features that occur are the name of the country, the provinces, the cities, and towns; in short all that relates to man and human history. An uninhabited country would excite little attention however distinguished by the grand characters of nature; and any country is only recommended to more or less notice by its history and the merits of its inhabitants. The appearance even of some countries, as Holland, &c. is wholly changed by human art and industry. These considerations will be found to corroborate the propriety of the plan here adopted, in which the natural geography, itself in a great measure subject to human industry, is placed in the last rank.

[2] The word *quarter*, as denoting a fourth part, becomes rather a solecism, when applied to the four grand divisions of the earth: it may be accepted in a second sense, equally popular in French and English, (whence derived?) which signifies a particular region, or station: yet a fifth or sixth *quarter* of the world

Of the grand divisions of the earth Asia has ever been the most populous, and is supposed to contain about 500,000,000 of souls, if China, as recently averred, comprize 330,000,000. The population of Africa may be 30,000,000, of America 20,000,000: and 150,000,000 may be assigned to Europe [3].

FACE OF THE GLOBE.] Recent discoveries have evinced that more than two-thirds of this globe are covered with water; and these waters, whether oceans, seas, lakes, or rivers, are contained in hollow spaces, more or less large, which late French geographers have styled *bassins*, or basons, by a term of little dignity. They may as well be called concavities; while, on the other hand, the chief convexities or protuberances of the globe, by the French styled *plateaux*, consist of elevated uplands, sometimes crowned by mountains, sometimes rather level, as in the extensive central protuberance of Asia. In either case, long chains of mountains commonly proceed from those chief convexities, in various directions; and the principal rivers usually spring from the most elevated grounds. Though the low and fertile plains, generally perceivable for a long space before rivers enter the sea, be often deposited by their waters, as in the Delta, and other instances, yet the geologist would in vain attempt general rules; while as on a small scale, deep glens are found without any rivulet, so on a large, vast and extensive hollows will appear, without the smallest trace of their having being pervaded by a river.

OCEANS.] The grandest concavity of this globe is filled by the Pacific Ocean [4], occupying nearly half of its surface, from the eastern shores of New Holland to the western coast of America; and diversified with several groups of islands, which seem as it were the summits of vast mountains emerging from the waves. This chief concavity, separately considered, receives but few rivers, the chief being the Amur from Tatary, and the Hoan Ho and Kian Ku from China, while the principal rivers of America run towards the east.

The next grand concavity is that of the Atlantic Ocean, between the ancient continent and the new. A third is the Indian Ocean.

The seas between the arctic and antarctic circles and the poles, have been styled the Arctic and Antarctic Oceans; the latter having supplanted the Terra Australis, and being in fact only a continuation of the Pacific, Atlantic, and Indian Oceans; while the Arctic Sea is partly embraced by continents, and receives many important rivers.

Such are the most profound concavities of the globe, while others are filled by more minute seas, as the Mediterranean, the Baltic, and others of yet smaller extent, till we descend to inland lakes of fresh water.

RIVERS.] Oblong concavities, sometimes of great length, mark the courses of the rivers; which, generally, at first intersect the higher grounds, till the declivity become more gentle, on their approach towards their inferior receptacles. But as general views are seldom precise, it must not be forgotten, as already in part observed, that even large rivers sometimes spring from lowland marshes, and wind through vast plains, unaccompanied by any concavity, except that of their immediate course; while, on the other hand, extensive vales, and low hollow spaces frequently occur, destitute of any stream. Rivers will also sometimes force a passage, where nature as erected mountains and rocks against it; and where the *bassin* of the French would appear to be in another direction, which the river might have gained with more ease; so estranged is nature from human

would not please the ear. The *Magellanica* of Cluverius and de Brosses has faded before the light of recent discoveries; but the *Australasia* and *Polynesia* of the latter are excellent and clear arrangements, now justly adopted by most men of science.

[3] Australasia and Polynesia, or New Holland, and the isles in the Pacific, probably do not contain above half a million.

[4] It has lately been termed, with far more propriety, THE GREAT OCEAN.

theory. In like manner though the chief chains of mountains in Europe extend in a south-easterly and north-westerly direction, yet there are so many exceptions, and such numerous and important variations in other parts of the globe, that theory in vain attempts to generalize. As mountains may be found in every direction of the compass, so a river may rise from an inland lake or marsh, and force its way through rocky barriers of great elevation. In short, the theory of the French geographers, though just in general, must not be too widely accepted: and the book of nature must be regarded as the chief code of consultation.

CONTINENTS.] From the vast expanse of oceanic waters, arises in the ancient hemisphere, that wide continent, which contains Asia, Europe, and Africa; and in the modern hemisphere the continent of America, now discovered to form, as it were, a separate island, divided by a streight of the sea from the ancient continent. In the latter many discoveries, of the utmost importance to geography, are of very modern date, and it is not above sixty years since we obtained an imperfect idea of the extent of Siberia, and the Russian empire: nor above twenty since ample, real, and accurate knowledge of these wide regions began to be diffused. So that in fact America may be said to have been discovered before Asia: and of Africa our knowledge continues imperfect, while the newest observations, instead of diminishing, rather increase our ideas of its extent.

But the grandest division of the ancient continent is Asia, the parent of nations and of civilization; on the north-east and south, surrounded by the ocean; but on the west divided by an ideal line from Africa; and from Europe by boundaries not very strongly impressed by the hand of nature. The Russian and the Turkish empires, extending over large portions of both continents, intimately connect Asia with Europe. But for the sake of clearness and precision, the chief merits of any work of science, geographers retain the strict division of the ancient continent into three great parts, sacrificing a more minute to a more important distinction; which, if not strictly natural, is ethical, as the manners of the Asiatic subjects of Russia, and even of Turkey, differ considerably from those of the European inhabitants of those empires.

As Europe is the seat of letters and arts, and the greatest exertions of human energy in every department; and is besides the native region of the chief modern geographers, and that in which the readers are most intimately and deeply interested, it is always the division first treated; though the order be arbitrary, and Ptolemy, who has been styled the father of geography, begins indeed with Europe, but describes Africa before Asia [5]. Before proceeding more minutely to consider the several kingdoms and states comprised in this great division of the globe, it will be proper, in compliance with an usual and unobjectionable form, to offer a brief and general description of this distinguished portion of the earth.

[5] The best edition of his maps, Amst. 1730, places Africa first.

EUROPE.
North Cape
ATLANTIC OCEAN
BRITISH CHANNEL
BAY of BISCAY
MEDITERRANEAN SEA
BALTIC SEA
BLACK SEA
CASPIAN SEA
GULF of VENICE
GULF of FINLAND
GULF of BOTHNIA
ICELAND
Ferroe Islands
Shetland Islands
Orkney Islands
BRITISH ISLES
IRELAND
FRANCE
SPAIN
PORTUGAL
GERMAN SEA
DENMARK
SWEDEN
NORWAY
PRUSSIA
AUSTRIA
RUSSIA
TURKEY
ITALY
CORSICA
SARDINIA
SICILY
AFRICA
ASIA MINOR
SYRIA
PETERSBURG
MOSCOW
WARSAW
VIENNA
PARIS
LONDON
ASTRACHAN
CONSTANTINOPLE
Jerusalem

EUROPE.

EXTENT.] THIS part of the globe is the smallest in extent, yielding considerably even to Africa. From the Portuguese Cape, styled by our mariners the Rock of Lisbon, in the west, to the Uralian mountains in the east, the length may be about 3,300 British miles; and the breadth from Cape Nord, in Danish Lapland to Cape Matapan, the southern extremity of Greece, may be about 2,350. The contents in square miles have been estimated with such diversity of opinion, such estimates being, in truth, arbitrary and only comparative, that it is sufficient to mention the medial number of about two millions and a half.

LIMITS.] The ancients had no just ideas of the boundaries of Europe, the name itself having seemingly originated from a small district near the Hellespont, as the distinctive name of Asia also spread from the opposite shore. More than a third part of Europe, towards the north and east, has only been known with precision in modern times. On the south it is limited by the Mediterranean sea; on the west by the Atlantic, which contains the most remote European islands, the Azores and Iceland, Greenland being regarded as a part of North America. On the north the boundary is the Arctic Ocean, embracing the remote isles of Spitzbergen, and Novaya Zemlia, or the New Land. Toward the east the boundaries admit of some discussion.

The boundaries between Europe and Asia, great portions of the globe, have always been discriminated by the hand of Nature, in a political, ethical, and physical point of view; the animals and plants of Asia and Europe being as distinct as the manners of the nations, and their policies of liberty or slavery. Yet geographers have unaccountably

neglected

neglected the grand limits between continents, though justly to be classed among the principal features of their science.

The ancients could have no distinct notions on the subject, as their knowledge was, unfortunately, the most confined in those very regions, where the just and natural limits are to be traced. Even Egypt was long classed as a part of Asia, though the desert of Suez forms a boundary sufficiently broad, for an ideal line can never be regarded as a sufficient limit for a continent; and the boundaries ought, on the great scale of nature, to be viewed as neutral ground, in like manner, as the intervening seas are not divided by ideal lines.

To Europeans, the limits between their continent and Asia are particularly interesting, in regard to the origin and history of nations, their laws, manners, and customs. Europe being the smallest but the most enlightened of all the continents, it becomes important to lose no portion in the vast and vague extent of Asia; and every reader will judge, that he has more distinct and appropriated ideas of any particle of Europe, than if regarded as belonging to Asia. When he learns for example, that the city of Astracan, so celebrated in poetry and romance, is more justly considered as European than Asiatic, he assumes a more homefelt curiosity, a more profound, a kind of patriotic interest, in its fame and destiny.

It is to the Russian empire, in both continents, and to the illumination diffused by its scientific authors and travellers, that we are indebted for clear and precise information on this important topic. Yet their ideas, scattered through various voluminous works, have not been concentrated, though maps have been recently published, approaching to more just and grand, and, above all, to more natural boundaries. Thus emboldened, the author ventures, but with great submission and deference to the public verdict of present and future times, to explain his ideas on this grand subject of geography, which have remained in his bosom, or in conversation, for many years; always apprehensive, as he is, of any novelty which malignity might ascribe to presumption; for he knows that modesty and talent are sisters, and that he is the most learned, who has learned his own ignorance.

The ancients, as is well known, regarded the river Tanais or Don, as the boundary between Europe and Asia, from the age of Eratosthenes to that of Isidore of Seville; with the exception of Herodotus, who hesitates between the Tanais and the Phasis of Colchis. The Tanais, in their idea, rose in the Riphæan mountains, in fact, a forest running east and west. On the north, even of the Caspian, they had only a vague idea of the Massagetæ and other barbarous tribes. Nor was the form of the Caspian known till 1720.

Till the end of the sixteenth century, the maps of Ptolemy were the sole fountains of geography. Nay, the eighteenth century had dawned before the mountains of Ural were disclosed, and some bold geographers assumed the river Ob, as the boundary between Europe and Asia. That distinction was, however, soon allotted most justly to the grand Uralian chain, which remains a natural and perpetual frontier.

But the Tanais retained the honours which it had usurped over the Phasis, and ancient and modern knowledge became as incompatible as the Ptolemaic and Newtonian systems; for the great river Volga was considered as partly European, partly Asiatic, a circumstance wholly absurd and foreign to every idea of great continental arrangement.

The Uralian Chain forms a natural barrier; the zoology and botany being different, as Pallas has observed, on the eastern and western parts. It verges south-west towards the Caspian, but becoming indistinct, no boundary more just or natural, or regularly linear,

INLAND SEAS.] In a general view of Europe, one of the most striking and interesting features is the number and extent of the inland seas, justly regarded as chief causes of the extensive industry and civilization, and consequent superiority to the other grand divisions of the globe. Had Africa been intersected by a large inland sea from the west, it is probable that the blessings of industry would have been widely spread. Among inland seas the Mediterranean is justly pre-eminent, having been the center of civilization to ancient and modern Europe. The columns of Hercules marked its western boundary, being the mountain or rock of Abyla, now called Ceuta, and Kalpe in Spain, the Gibraltar of modern fame. The length of the Mediterranean is about 2000 miles to its farthest extremity in Syria; but in ancient maps the length has been extended to about 2500 miles. On its northern side open two immense gulphs, that of Venice, and the Archipelago; the former being the Adriatic, the latter the Egean sea, of the ancients. From this last a streight, called the Hellespont, conducts to the sea of Marmora the classical Propontis: and another now styled the Streight of Constantinople, the ancient Thracian Bosphorus, leads to the Euxine, or Black Sea; which, to the north presents the shallow Palus Mæotis, or sea of Azof, the utmost maritime limit of Europe in that quarter. This wide expanse of the Mediterranean is beautifully sprinkled with islands, and environed with opulent coasts, abounding with the most sublime and picturesque features of nature: tides are not perceivable, except in the narrowest streights; but according to physiologists there is a current along the Italian shore, from the west to the east, and towards the African coast in an opposite direction. In the Adriatic the current runs north-west along Dalmatia, and returns by the opposite shore of Italy. The Mediterranean abounds with fish, many of which are little known in more northern latitudes. The chief fisheries are those of the tunny, of the sword-fish, and of the sea-dog, a species of shark, and of the diminutive anchovy. It is also the chief seminary of coral, now known to be the work of marine insects. This supposed plant is of three colours, the red, the vermillion, and the white; and its greatest height is about eleven inches. It is equally hard in the sea, and in the air; and is generally brought up by a kind of net from the depth of 60 to 125 feet [9]. To enumerate and ascertain shoals and rocks is the office of the hydrographer; but fishing banks are of general importance, and some are found near Sicily. The Black Sea is said to derive its name from its black rocks, or dangerous navigation; but it is difficult to account for such terms, often derived from the fertile and superstitious fancy of mariners. The sea of Azof is polluted with mud, whence it was styled Palus, or a marsh, by the ancients: it is united to the Uxine by the Streight of Caffa, the ancient Cimmerian Bosphorus.

The second grand inland sea of Europe is the Baltic, by the Germans called the Eastern Sea; whence the Easterlings of English history, people from the shores of the Baltic. This extensive inlet opens from the German Sea, by a gulph pointing N. E. called the Skager Rack; and afterwards passes south, in what is called the Cattegat, to the S. E. of which is the Sound of Elsinore, a streight where vessels pay a tribute of courtesy to Denmark. The Baltic afterwards spreads widely to the N. E. and is divided into two extensive branches, called the Gulphs of Bothnia and Finland, both covered or impeded with ice for four or five months of the northern winter. Ancient historians even report that wolves have passed on the ice from Norway to Jutland; and, if veracious, the rigour of the seasons must have greatly abated. The greatest depth of this sea is said not to exceed fifty fathoms. Swedish physiologists pronounce that it loses about four feet in extent in the course of a century; and that the water does not contain above one-thirtieth part of salt, whereas other sea water often holds a tenth: this freshness they impute to the quantity of ice; and they also assert, that when the north

[9] Spallanzani's Trav. in the Two Sicilies, iv. 317.

wind

wind blows, the waters become so fresh, that they may even be employed for domestic uses. Tides are unknown, and the fish are few.

The third and last inland sea of Europe is that called the White Sea, in the north of Russia, more known in Europe, and particularly to English enterprize, before the commerce of Archangel was supplanted by that of Petersburgh. To Octer, in the reign of the great Alfred, it was known by the name of the Qven Sea; and the Icelandic writers styled it the Sea of Ganviik, on the shore of which was their Biarmia. The White Sea contains a number of small islands; but the accounts yet given have been brief and unsatisfactory.

Other Seas.] Among the other maritime divisions may be named the German Sea, so called because it waters the western shores of ancient Germany, from the Rhine to the extremity of Jutland. It is now often styled, with sufficient impropriety, the North Sea, a term probably adopted by us from the Dutch. It may be regarded as a part of the Atlantic ocean, terminating at the Streights of Dover; whence the British Channel extends to the west. The Bay of Biscay is another large inlet of the Atlantic. The Bristol Channel is rather the estuary, or wide frith, of the Severn. Between Great Britain and Ireland are St. George's Channel on the south; the Irish Sea in the centre, which leads to the North Channel. That part of the Atlantic which passes between Scotland and the extreme range of the western isles, from Barra to Leuis, has received no distinct appellation, though it might be aptly styled the Hebudian Channel. To the north of Scotland is the Deucaledonian Sea of the ancients; which being considered as extending into and throughout the Baltic, was also styled the Sarmatian.

Arctic Ocean.] To the north of Europe is the Arctic Ocean, the dismal and solitary reservoir of myriads of miles of ice, the very skirts of which, floating in enormous mountains, crowned with brilliant pinnacles of every hue, delight the eye and appal the heart of the mariner. Yet this enormous waste is, in the hand of Providence, a fertile field of provisions for the human race. Here the vast battalions of herrings seem to seek a refuge from numerous foes, and to breed their millions in security. About the middle of winter, emerging from their retreat, they spread in two divisions, one towards the west, which covers the shores of America, as far as the Chesapeak and Carolina; while a third more minute squadron passes the streight between Asia and America, and visits the coasts of Kamschatka [10]. The most memorable division reaches Iceland about the beginning of March, in a close phalanx of surprising depth, and such extent, that the surface is supposed to equal the dimensions of Great Britain and Ireland. They are however subdivided into numberless columns of five or six miles in length, and three or four in breadth, followed by numerous sea-fowl, and perceivable by the rippling of the water, and a brilliant reflection like that of a rainbow. In April or May the vanguard of those allotted to the British dominions reaches Shetland, and the grand body arrives in June; towards the end of which month, and through that of July, they are in the greatest perfection, a circumstance well known to the Dutch fishers, who then caught that superior sort which formed the grand source of the wealth of the United Provinces. From Shetland one division proceeds towards the east, as far as Yarmouth, where they appear in October. The other brigade passes to the west, along both shores of Ireland. A few stragglers are found at irregular periods, having proceeded beyond their powers of return; but it is generally credited, that millions regain the Arctic Ocean, and deposit their spawn about the month of October.

"The reality of the migration of the herrings, so well detailed by Mr. Pennant, begins at present to be greatly called in question, and it is rather supposed that this

[10] Pennant's Arctic Zool. i. 211.

fish

fish, like the mackarel, is in reality at no very great distance, during the winter months, from the shores which it most frequents at the commencement of the spawning season, inhabiting in winter the deep recesses of the ocean, or plunging itself beneath the soft mud at the bottom; but at the vernal season it begins to quit the deeper parts, and approach the shallows, in order to deposit its spawn in proper situations; and this is thought a sufficient explanation of the glittering myriads which at particular seasons illumine the surface of the ocean for the length and breadth of several miles at once.[11] As a proof of this, Dr. Bloch observes, that herrings are in reality found, at almost all seasons of the year, about some of the European coasts; and that the northern voyages, supposed by Pennant and others, are impracticable in the short period assigned by naturalists, the fish in its swiftest progress being utterly incapable of moving at so rapid a rate as this migration necessarily supposes. For these and other reasons, Dr. Bloch is inclined to believe the long voyage of the herring only to exist in the minds of its describers."

To enumerate the smaller gulfs, the straits, and other minute diversities of the seas, either in a feeble series of names, or in a dry arithmetical table, would be superfluous, as they are best studied in the maps, and as that mode of communicating science is perhaps of all others the most uncouth and repulsive. As well might history be studied by the barren repetition of a hundred names of statesmen and warriors. But this account of the European seas must not be closed without a few brief hints on a subject generally neglected in works of this nature, the large banks, or comparative shoals[12], supposed to be ridges of submarine mountains, and which being frequently the resort of cod and other fish, invite the attention of national industry. The Goodwin Sands, off the coast of Kent, are rather dangerous to the mariner, than inviting to the fisher; but on the coast of Holland there are many banks which supply excellent fish, as turbot, soal, plaice, &c. Further to the north is the extensive Dogger Bank, stretching south-east and north-west; beginning about twelve leagues from Flamborough head, and extending near 72 leagues towards the coast of Jutland. Between the Dogger and the Well Bank, to the south, are the Silverpits of the mariners, which supply London with cod, a fish which loves the deep water near the banks, while the flat fish delight in the shallows. Near the Dogger Bank was fought the noted engagement with the Dutch in 1781. The Ore and the Lemon lie between these banks and the British shores. To the north-east of the Dogger Bank is the Horntiff, a narrow strip extending to Jutland: the Jutts-riff is a sand-bank, stretching, like a crescent, from the mouth of the Baltic into the German Sea.

The Mar Bank begins opposite to Berwick, but is only about fifteen miles in length. Further to the east extends the Long Fortys, of great extent, from Buchan Ness to Newcastle; and from forty to one hundred miles distant from the shore. From the coast of Buchan a bank also reaches across the German sea towards the Jutts-riffe. What are called the Montrose Pits, as being in the latitude of that town, though to the east of the Long Fortys, are hollows, from three to four miles in diameter, and from seventy to one hundred fathom deep, with a soft muddy bottom, in a bank of gravel about fifty miles long, under forty fathom of water.

In the open Atlantic the largest bank is that of Newfoundland, reserved for the description of the American seas; but there is a considerable bank to the west of the Hebudes, abounding with cod and other fish.

Rivers and Mountains.] The chief rivers of Europe are described under the respective countries through which they flow. Of the vast Wolga, far the greater

[11] Herrings spawn at different seasons, some in spring, some in summer, some in autumn. In the rivers of North America they appear very young.

[12] Sand-banks.

part is included in Europe, or more justly, the whole, by the recent boundaries above explained. The Danube is the next in fame; and is followed by the Dnieper or Nieper, the Rhine, and the Elbe. The most elevated mountains are the Alps, which are followed by the Pyrenees, and the extensive ridge which divides Norway from Sweden. The Carpathian mountains, and the chain of Emineh or Hæmus, are, with the Apennines, of inferior extent and height. The Caucasus is now considered as a frontier. In the particular descriptions, these grand and immoveable features of nature, which unaccountably have only attracted due attention within these few years, will be found to be illustrated as far as the materials would permit.

GOVERNMENTS.] The kingdoms and states of Europe may be considered, 1. As despotic monarchies, as those of Russia and Turkey; 2. Absolute monarchies, as Spain, Denmark, &c.; or, 3. Limited monarchies, as the empire of Germany, kingdom of Great Britain, &c. Since the fall of Venice, and the subversion of Swisserland and Holland, scarcely an example occurs of permanent and fixed aristocracy, or the hereditary government of nobles. Of democracy, or more strictly speaking, elective aristocracy, a few cities, and some Swiss cantons, may preserve a semblance.

ARRANGEMENT.] According to the plan of this work, already explained in the Preface, the various states of Europe will be arranged in three divisions, considering them according to their real consequence, as of the first, second, or third order; and each will be treated at a length proportioned to its weight in the political scale, and the consequent interest which it inspires. A small state may indeed sometimes excite a more just curiosity than one of larger dimensions; but such considerations are foreign to an exact system of Geography, detailed in a precise order of topics, and extended with impartial views over the whole circle of human affairs. Foreigners may object that too much space is allotted to the British dominions; but the same objection might extend to every system ancient and modern, as the authors have always enlarged the description of the countries in which they wrote. His native country ought also to be the chief subject of every reader; nor can much useful knowledge (for our knowledge chiefly springs from comparison) be instituted concerning foreign regions, till after we have formed an intimate acquaintance with our native land. It will also be understood that, though no point of science be more simple or clear than the arrangement of states, according to their separate orders, at a given period, yet it would be alike idle and presumptuous to decide the precise rank of a state in each order; for instance, whether France or Russia be the most powerful. This part of the arrangement must therefore be elective; and it is sufficient that the states of the same order be treated with a similar length of description.

At the beginning of the nineteenth century, the European states comprized in the first order are: 1. The united kingdoms of Great Britain and Ireland: 2. France: 3. Russia: 4. The Austrian dominions: 5. Those of Prussia: 6. Spain: 7. Turkey: which last cannot so justly be reduced to the second order; for though perhaps approaching its fall, still it boasts the name and weight of an empire.

Under the second order have been arranged: 1. Holland, or the United Provinces: 2. Denmark: 3. Sweden: 4. Portugal: 5. Swisserland. In the third are considered the chief states of Germany, that labyrinth of geography, and those of Italy. The kingdoms of Sicily and Sardinia might perhaps, if entire and unshaken, aspire to the second order; and an equal station might be claimed by the junctive Electorate Palatine and Bavarian, and by that of Saxony. But as such states only form rather superior divisions of Germany and Italy, it appeared more adviseable to consider them in their natural intimate connexion with these countries.

This explanation being premised, the first description shall be that of the British dominions.

Arrowsmith direxit.

From the various Surveys of England.

Lowry sculp.

Published March 1st 1802 by Cadell and Davies Strand: and Longman and Rees, Paternoster Row.

From Arrowsmith's Map of the British Isles.

Published March 1st 1802, by Cadell and Davies, Strand, and Longman and Rees, Paternoster Row.

Lowry sculp.

ENGLAND.

CHAPTER I.

HISTORICAL OR PROGRESSIVE GEOGRAPHY.

Names.—Extent.—Original Population.—Roman, Saxon, and Norman Geography.—Historical Epochs, and Antiquities.

NAMES.] THE Phœnicians, the most ancient enlightened navigators, are generally allowed to have been the first discoverers of the British Iſlands, and to have transmitted their fame on the page of recorded knowledge. Bochart even supposes that the name of *Britain* originates from a Phœnician word; and another learned writer justly infers, that the name of *Cassiterides*, afterwards restricted to the isles of Scilly, was at first extended to Great Britain and Ireland[1]. This name implies in the Greek language the islands of *tin;* and was probably translated from ſome corresponding Phœnician term. However this be, the appellations of *Albion* and *Britannia* are afterwards commemorated in Grecian and Roman geography; and the first being probably conferred by the Celtic or primeval inhabitants, the latter by the Belgic colonies. But etymological disquisitions are foreign to the present purpose.

The southern, most opulent, and most important division of Britain, has ever since the days of Bede, been distinguished among the European nations by the name of *Anglia*, or England, well known to have originated from the Angles, a nation of the Cimbric Cherſonese, or modern Jutland, who conquered a considerable portion of the country.

EXTENT.] The Island of Great Britain extends from fifty to fifty-eight and a half degrees of north latitude, being about 500 geographical miles in length. Its greatest breadth, from the Land's End to the North Foreland in Kent, 320 geographical miles. In British miles the length may be computed at 580, and the breadth at 370.

BOUNDARIES.] England is bounded on the east by the German Ocean; on the south by the English Channel; on the West by St. George's Channel; on the north by the Cheviot Hills, by the pastoral river Tweed, and an ideal line falling south-west down to the Firth of Solway. The extent of England and Wales in square miles is computed at 58,335; and the population being estimated at 9,500,000, the number of inhabitants to a square mile will be about 162[2].

[1] Huet. Hist. du Com. et de la Nav. des Anciens, p. 194. Rennell, Geog. of Horodotus, p. 4.

[2] Knox computes Scotland with the Isles at 27,794, and Ireland at 27,457; France at 141,357 square miles.

ORIGINAL POPULATION.] The earliest population of this fertile country which can be traced, is that of the Gael or Southern Celts, called *Guydels* by the Welsh, who regard them as their predecessors; and who have justly remarked, that the most ancient names, even in Wales, are Guydelic, not Cumraig or Welsh [3]. Thofe Gael appear to have proceeded from the nearest shores of France and Flanders.

As in later times the Belgic fettlers in this country were subdued by the Northern Saxons, so the Celtic colony from the south was vanquished by the Cimbri of the North, the ancestors of the modern Welsh, who style themselves Cymri, and their language Cymraig, to this day. The original Gaelic inhabitants appear to have almost entirely evacuated the country, and to have retired to Ireland, also originally peopled from Gaul. There, and in the Highlands of Scotland, to which a Gaelic colony passed from Ireland, the Gaelic dialect of the Celtic language still exists.

To the Celtic population of England succeeded the Gothic. The Scythians or Goths, advancing from Asia, drove the Cimbri or northern Celts before them; and, at a period long preceding the Christian Æra, had seized on that part of Gaul which is nearest to Great Britain, where they acquired the provincial denomination of Belgæ [4]. Their passage to England followed of course: and when Cæsar first explored this island, he informs us, that the primitive inhabitants were driven into the interior parts, while the regions on the south-east were peopled with Belgic colonies [5]. Those Belgæ may be justly regarded as the chief ancestors of the English nation; for the Saxons, Angles, and other northern invaders, though of distinguished courage, were inconsiderable in numbers. Till a recent period antiquaries had imagined that the Belgæ used the Celtic language, and execrated the cruelties of the Saxons for an extirpation which never happened. But as it appears that two-thirds of England were possessed by the Belgic Goths, for six or seven centuries before the arrival of the Saxons, it is no wonder that no Celtic words are to be found in the English language, which bears more affinity to the Frisic and Dutch than to the Jutlandic or Danish.

Emolliated by four centuries of Roman domination, even the Belgic colonies had forgotten their pristine valour, and were unable to contend with their ferocious invaders from Scotland and Ireland, when chance, or invitation, conducted to their assistance new armies from the continent. The Jutes arrived in the year 449, and founded the kingdom of Kent about the year 460; they also took possession of the Isle of Wight. In 447, the Saxons first appear on the coast of Sussex, and the kingdom of the South Saxons commences at that epoch. The Weft Saxons arrived in the year 495. The sixth century was considerably advanced, when thofe barbaric colonies were increased by the East Saxons in the year 527: but the first appearance of the great branch of the Angles, who were to perpetuate their name in the country at large, did not occur till the year 547, when the valiant Ida led his troops to Bernicia. The East Angles taking possession of Norfolk in the year 575, the southern and eastern coasts were almost wholly in the power of the invaders, who foon extending their conquests into the interior of the country, founded in the year 585, the kingdom of Mercia, the last of the Heptarchy [6]. Bede pronounces Mercia to have been an Anglic kingdom; and if so, the Angles may, perhaps, have equalled in numbers the Saxons themselves. Certain it is, that Procopius, a writer of the sixth century, classes the Angli in the first rank of the British nations of his time [7]. We shall not stop to enquire whether his *Frisones* be the Saxons or the Belgæ. The original documents evince, that all these new colonies, while they conquered by superior valour and hardihood, were far from being sufficiently numerous to form even a semblance of population. Scarcely an instance occurs of their being accompanied by women; and their

[3] Lluyd Arch pref. [4] Dissert. on Goths. [5] Lib. v. c. 10.
[6] Beda, Chron. Sax. &c. [7] Bell. Goth. lib. iv. c. 20.

invasions

invasions may, in part, be paralleled by the subsequent conquests of the Danes and Normans. Yet as the period was far more barbarous, the changes were greater; and the Belgic inhabitants, the genuine population, seem to have been reduced to various degrees of servitude, and to have constituted those numerous slaves mentioned in the Anglo-Saxon times, while intermarriages and other fortunate circumstances lightened the Norman chain. There seems little room to doubt that the Belgæ constituted the chief ancestors of the English nation, and that their language gradually prevailed, though tinged in the north with the Anglic or Danish, and in the south with the Saxon. This subject has been the more amply discussed, because it is not only of essential importance in itself, but because it has hitherto been clouded with many crude and erroneous assertions and opinions.

PROGRESSIVE GEOGRAPHY.] The knowledge of the progressive geography of any country is indispensably necessary for the elucidation of its history. When the Romans entered Britain, they found the country, like others in the savage state, divided among a number of small tribes. With their usual policy they established large provinces. *Britannia prima* embraced the whole southern part of England, as far as the Severn and the Thames: *Britannia secunda* corresponded to modern Wales. *Flavia Cæsariensis* extended from the Thames to the Humber, a noble province, receiving its denomination from the imperial house of Vespasian, and his two successors, under whom some of the most important conquests were achieved. Vespasian himself was, in the reign of Claudius, the first general who began the real conquest of Britain[8]. The province of *Maxima Cæsariensis* reached from the Humber to the Tyne, from the Mersey to the Solway[9]. In the Roman times, about thirty eminent cities, or rather towns, are enumerated, about nine of which are denominated colonies, though none of them could be of much importance; for while the Roman colonies in other countries issued abundance of coins, hardly one real coin even of Camulodunum, the most important colony, can be pointed out. Our antiquaries indeed have, with erroneous patriotism, transferred many Gallic coins, as British, and have amused their readers with many fabricated pieces of antiquity; but real medallists, English as well as foreign, hesitate greatly on the subject. A more detailed account of the Roman Geography of England does not fall within the present plan, and the curious reader must be referred to Horsley and Roy, authors of deserved estimation.

SAXON.] The Saxon Geography of England has been partly above indicated; but the following table of the Heptarchy will present a more complete idea.

1. Kent comprehended the county of Kent.
2. Sussex, or the South Saxons, { Sussex. Surrey.
3. East Angles, - - - { Norfolk. Suffolk. Cambridgeshire, with the Isle of Ely.
4. Wessex, or the West Saxons, { Cornwall. Devonshire. Dorset. Somerset. Wilts. Hants. Berks.

[8] Tacitus, vita Agricolæ, c. 13.
[9] Gough's Camden, cxxix., or clxxxvi. edit. 1806. Roy's Map, &c.

5. North

5. Northumberland, - -	Lancashire. Yorkshire. Durham. Cumberland. Westmoreland. Northumberland, and the parts of Scotland to the Frith of Edinburgh.
6. Essex, or the East Saxons, -	Essex. Middlesex. Hertfordshire in part.
7. Mercia, - - - - -	Gloucester. Hereford. Warwick. Worcester. Leicester. Rutland. Northampton. Lincoln. Huntingdon. Bedford. Buckingham. Oxford. Stafford. Derby. Salop. Nottingham. The reſt of Hertford [10].

SHIRES.] Ancient authors affirm, that the great Alfred instiued the first division of England into SHIRES, ſo denominated from a Saxon word, signifying parts cut off, or divisions. They are also denominated COUNTIES, as having been each governed by a distinct *Ealdorman*, corresponding with the Latin word *Comes*, or Count; and sometimes translated *Consul*, and sometimes *Comes*, by those Anglo-Saxon authors, who wrote in Latin. After the Danish conquest, this officer or grandee was known by another appellation, that of *Earl*, from the Daniſh *Iarl*; which, like the word Baron, in its original acceptation, implied simply, but by way of great eminence, A MAN. About the eleventh century these titles became hereditary dignities; and the government of the shire devolved upon the Earl's deputy, the *Vice Comes*, *Shire-reeve*, Sheriff, or manager of the shire. A remarkable subdivision prevails in the extensive county of York, which was divided into three parts, implied in the Saxon word *Trythings*, now corruptly called Ridings. England and Wales are divided into fifty-two shires or counties.

		Number of inhabitants, according to the late enumeration.	Chief Towns.
Six northern counties,	Northumberland, - - -	157,101	Newcastle.
	Cumberland, - - - -	117,230	Carlisle.
	Durham, - - - - -	160,361	Durham.
	Yorkshire, - - - - -	858,892	York.
	Westmoreland,- - - -	41,617	Appleby.
	Lancashire, - - - -	672,731	Lancaster.

[10] Gough's Camden, cxxxi., or clxxxvii. edit. 1806.

Four

		Number of Inhabitants, according to the late enumeration.	Chief Towns.
Four bordering on Wales.	Cheshire,	191,751	Chester.
	Shropshire	167,639	Shrewsbury.
	Herefordshire,	89,191	Hereford.
	Monmouthshire,	45,582	Monmouth.
Twelve midland,	Nottinghamshire,	140,350	Nottingham.
	Derbyshire,	161,142	Derby.
	Staffordshire,	239,153	Stafford.
	Leicestershire,	130,081	Leicester.
	Rutlandshire,	16,356	Okeham.
	Northamptonshire,	131,757	Northampton.
	Warwickshire,	208,190	Warwick.
	Worcestershire,	139,333	Worcester.
	Gloucestershire,	250,809	Gloucester.
	Oxfordshire,	109,620	Oxford.
	Buckinghamshire,	107,444	Aylesbury.
	Bedfordshire,	63,393	Bedford.
Eight eastern,	Lincolnshire,	208,557	Lincoln.
	Huntingdonshire,	37,568	Huntingdon.
	Cambridgeshire,	89,346	Cambridge.
	Norfolk,	273,371	Norwich.
	Suffolk,	210,431	Ipswich.
	Essex,	226,407	Chelmsford.
	Hertfordshire,	97,577	Hertford.
	Middlesex[11],	818,129	London.
Three southern,	Surrey,	269,043	Guildford.
	Kent,	307,624	Maidstone.
	Sussex,	159,311	Lewes.
Four southern,	Berkshire,	109,215	Reading.
	Wiltshire,	185,107	Salisbury.
	Hampshire,	219,656	Winchester.
	Dorsetshire,	115,319	Dorchester.
Three south-western,	Somersetshire,	273,750	Taunton.
	Devonshire,	343,001	Exeter.
	Cornwall,	188,269	Launceston.
Six, North Wales,	Flintshire,	39,622	Flint.
	Denbighshire,	60,352	Denbigh.
	Caernarvonshire,	41,521	Caernarvon.
	Anglesey,	33,806	Beaumaris.
	Merionethshire,	29,506	Bala.
	Montgomeryshire,	47,978	Montgomery.
Six, South Wales,	Radnorshire,	19,050	Presteign.
	Cardiganshire,	42,956	Cardigan.
	Pembrokeshire,	56,280	Pembroke.
	Caermarthenshire,	67,317	Caermarthen.
	Brecknockshire,	31,633	Brecknock.
	Glamorganshire,	71,525	Caerdiff.

[11] Exclusive of the capital, 864,845.

It

It is also generally believed that Alfred was the author of the subdivisions of counties, called hundreds and tythings, now seldom mentioned except in legal proceedings, and in topographical descriptions. It is probable that the hundred originally contained one hundred farms, or rather families; while the tything was restricted to ten[12]. Such are the chief features of the Saxon geography of England. The capitals of the several Heptarchic kingdoms varied at the will of the Sovereign. London which belonged to the East Saxons, maintained in some degree its Roman fame and eminence; but on the termination of the Heptarchy, Winchester was regarded as the capital of England. Further illustration will arise under the head of Ecclesiastical Geography.

It must not however be forgotten, that the kingdom of Northumbria, comprising the regions north of the Humber, existed till the year 950, under its peculiar Sovereigns, the last of whom was Eric: and that even Domesday Book, which was compiled in the time of William the Conqueror, excludes the three counties of modern Northumberland, Cumberland, and Westmorland, then regarded as part of Scotland. Durham, the patrimony of St. Cuthbert, a province of ecclesiastic, not secular jurisdiction, is also omitted; and Lancashire is arranged under the divisions of Yorkshire and Cheshire. The kingdom of Bernicia at one period extended to the Frith of Forth; but in the latter Saxon times the boundaries of England on the north fell considerably short of their present extent. On the west, Offa king of Mercia restricted the Welsh by an extensive barrier, the remains of which are still called Offa's dyke[13]. It extended from the river Wye, along the counties of Hereford and Radnor into that of Montgomery, where it enters North Wales. It afterwards passes by Chirk Castle to the river Dee, and ends in the parish of Mold.

Norman.] Few alterations of any consequence appear in the Geography of England in the Norman period. The northern limits were however extended to their present circuit. Cumberland and Westmorland were wrested from the Scots, and the provinces north of the Humber were completely incorporated. On the west, Henry I., about the year 1120, having conquered a part of Wales, invited and established a Flemish colony[14] in Pembrokeshire, and one or two others of the most southern counties, which afterwards became remarkable for industry; a singular fact in modern history, though not unusual in ancient times, and for that period a remarkable stretch of political wisdom. The subsequent conquest of Wales by Edward I., and its gradual assimilation and association with England are sufficiently known.

Historical Epochs.] Geography has been styled one of the eyes of history, a subservience to which study is undoubtedly one of its grand objects; but it would, at the same time, be foreign to its nature to render it a vehicle of history. The proper and peculiar subjects of geographical science are so ample, and often attended with such difficult research, that it becomes equally rash and unnecessary to wander out of its appropriated domain. In this work therefore it is only proposed briefly to mention the grand historical epochs of nations; and those events which have altered their boundaries and geographical relations.

The population of England by the Celts may be regarded as the first historical epoch.

The second is formed by the Belgic colonies; who, perhaps about three centuries before the Christian æra, seized the southern and eastern shores, and advancing by degrees restricted the Celts to the west. The Belgic colonization of England is important in many points of view, as establishing the primitive germ of the present English nation, and as introducing agriculture, which was not practised by the hunting

[12] Blackstone i. 114. edit. 1809, says, that *ten families* made a town or tything; while a hundred contained ten times ten *families*. It probably follows Cowell's Interpreter.

[13] Pennant's Wales, vol. i. p. 273. [14] Will. Malmsb. lib. v.

and

and pastoral tribes of the Celts [15]: nor is it improbable that some of the fertile districts of England have known cultivation for the space of two thousand years.

3. Under Julius Cæsar the Romans can only be said to have explored this island; and near a century elapsed before the real conquest was commenced by Claudius; between whose reign and that of Domitian, the Roman Eagle had been displayed as far as the Grampian mountains. The fertility of the soil, and the Roman arts of civilization, softened the spirit even of the Belgic Britons, and inured them to docile servitude. Carausius and other chiefs seized the British purple, and availed themselves of the strong maritime barrier to bid defiance to the Cæsars; but their troops and their mariners had the name of Romans; and these were merely schisms of a vast empire, not assertions of native independence. The Britons on the contrary were afterwards forced to implore the assistance of the Romans against their few but ferocious invaders.

4. After a duration of four centuries, the Roman domination yielded to that of the Saxons and Angles, nations congenerous with the Belgæ. This revolution has indelibly impressed the name, character, language, laws, manners, and customs of the people.

5. After repeated ravages in the preceding centuries, the Danes in the year 1016, dispersed the armed force of England, and gave three Kings to the country, Canute, Harold, and Hardicanute; but the dominion returned to the Saxon line in the year 1042.

6. On the death of Edward the Confessor, what is called the conquest of England took place in 1066, under William the Norman. As the Normans, or Norwegians, had been settled in the north of France for a long time, they introduced the French language among people of rank, and even into legal procedure; a servile badge not even hitherto absolutely eradicated, though the motive must be applauded, as the property and personal security of successive generations are so intimately connected with the immutability of the national jurisprudence.

7. The great charter granted by John at Runnymede is deservedly esteemed a memorable epoch of English freedom.

8. The civil wars between the houses of York and Lancaster may be regarded as the next remarkable epoch. Though destructive of literature and the arts, they proved the perdition of a ferocious aristocracy; and thus established by degrees the third balance of the British constitution in the House of Commons.

9. The reformation, by delivering the nation from the heavy yoke of superstition, increased the national energies, and imparted freedom of thought, and a spirit of independence, to the individual character.

10. The civil wars under Charles I. had the usual effect of impeding the course of literature and the arts; but by the violent changes and consequences, and the excesses committed on both sides, superinduced from experience, the only teacher of practical wisdom, a spirit of mutual forbearance and toleration; so that the subsequent revolutions have, to the eternal honour of the national character, been effected almost without bloodshed, and by the mere weight of national will and experience.

11. The revolution under William III. and the laws enacted upon that occasion, by the unchangeable establishment of the Protestant religion, and many more minute emanations of freedom, still further contributed to national and individual independence; of which the accession of the House of Hanover constituted an additional pledge and confirmation.

12. The war with the American colonies forms not only an epoch of singular novelty, but of the most important consequences. It perhaps presented the first in-

[15] Cæsar, lib.v. c.10.

stance, in modern history, of a conflict between the parent state and its colonies. It was little disgraced with the atrocities of a civil war; and after a manly struggle was terminated with gentleness and moderation. The Americans broke their colonial bonds, but could not overcome their commercial, which must bind them to the parent state for some generations, if they do not even destroy their vaunted independence. The consequences of this revolution to the whole human race are incalculable; whatever they may be, an Englishman may well exult that his brethren have commenced a large empire in a new hemisphere, and may hope and wish that Asia and Africa may also be animated by the English character, which even envy must allow is inferior to none in the spirit of intelligence and improvement, in benevolence and integrity, and in rational and practical freedom.

ANTIQUITIES.] The ancient monuments of a country are intimately connected with the chief epochs of its history, and particularly with the revolutions it has undergone by foreign conquest, or new population. The English antiquities fall into six divisions. 1. Those belonging to the primitive Celtic inhabitants. 2. Those of the Belgic colonies. 3. Those of the Romans. 4. Those of the Saxons. 5. Relics of the Danes. 6. Norman monuments. Few of those remains, it must be confessed, throw much light upon history; but many of them being interesting and curious in themselves, they deserve the attention of the traveller and geographer.

BELGIC.] A radical mistake in the study of English antiquities has arisen from the confusion of the Celtic and Belgic languages and monuments. The Druids have deservedly attracted much curiosity and research; but it would be erroneous to impute to them, as is usual, the whole of our earliest remains. Cæsar speaks of Druidism as a recent institution; and such being the case, it is probable that it originated from the Phœnician factories, established in wooden fortresses on the coast, the usual practice of commercial nations, when trading with savage or barbarous races. The tenets correspond with what little exists of Phœnician mythology, and the missionaries of that refined people might be not a little zealous in their diffusion. However this be, the ancient authors, from whom we derive our sole authentic information concerning the Druids, minutely describe their religious rites, but are totally silent concerning any monuments of stone being used among them. On the contrary, they mention gloomy groves, and spreading oaks, as the only scenes of the Druidic ceremonies. Yet our antiquaries will even infer, that Stonehenge is a Druidic monument, though it be situated in an extensive plain, where not a vestige of wood appears, and where the very soil is reputed adverse to its vegetation.

It might, perhaps, be a vain effort of antiquarian investigation, to attempt to discriminate the remains of the earliest inhabitants from those of the Druidic period; indeed, if we set aside the authorities of modern antiquaries, commonly visionary and discordant, there is no foundation whatever for any sound or real knowledge of the subject. The following have been esteemed Druid monuments by Borlase: 1. Single stones erect: 2. Rock idols and pierced stones: 3. Rocking-stones used as ordeals: 4. Sepulchres of two, three, or more stones: 5. Circular temples, or rather circles of erect stones: 6. Barrows, or tumuli: 7. Cromlechs, or heaps of stones: 8. Rock-basons, imagined to have been used in Druidic expiations: 9. Caves, used as places of retreat in time of war [16]. But as most of those relics may also be found in Germany and Scandinavia, it becomes hazardous to pronounce whether they be Gothic or Celtic; and, as we learn from ancient authors that the Germans had no Druids, to bestow the name of Druidic, upon such monuments, is the mere wantonness of conjecture. It is, however, most probable, that the earliest inhabitants, as is ever the practice in the infancy of society, made use of wood, not stone, in their religious as well as in their domestic erections.

[16] See Enquiry into Hist. of Scotl. vol. i. p. 409.

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If we survey the various savage regions of the globe, we shall seldom or never perceive the use of stone; and it is certainly just to infer, that the savages of the West, were not more skilful than those of the East; nor those of the old continents and islands, than those of the new. However this be, a learned ignorance upon such topics, is preferable to an assumed and imaginary knowledge.

But as many of these monuments are found in Germany, Scandinavia, and Iceland; and as the Icelandic writers in particular, often indicate their origin and use, which are unknown in the Celtic records, there is every reason to attribute them to a more advanced stage of society, when the Belgic colonies introduced agriculture, and a little further progress in the rude arts of barbarism. The nature of this work will not admit a formal investigation of such topics, but a few remarks may be offered on Stonehenge, a stupendous monument of barbaric industry. Inigo Jones, in attempting to prove that it is Roman, only evinces that no talents can avail when science is wanting, and that antiquities require a severe and peculiar train of study. Doctor Stukeley, a visionary writer, assigns Stonehenge to the Druids; while Dr. Charlton perceiving that such monuments are found in Denmark, ascribed it to the Danes. If the latter had considered that the Belgæ were a Gothic nation of similar language and institutions, he might with more justice have extended its antiquity. From the Icelandic writers [17], we learn, that such circles were called *Domb-ringr* that is literally *Doom-ring*, or circle of judgment, being the solemn places where courts were held, of all kinds and dignities, from the national council down to the baronial court, or that of a common proprietor of land, for adjusting disputes between his *villani* and slaves. The magnificence of Stonehenge loudly pronounces that it was the supreme court of the nation, equivalent to the *Champs de Mars et de Mai* of the Franks, where the king and chiefs assembled in the circle, and the men capable of arms in the open plain; nor is it improbable that the chiefs ascended the transverse stones, and declared their resolves to the surrounding crowd, who, in the description of Tacitus, dissented by loud murmurs, or applauded by clashing their shields [18]. This idea receives confirmation from the circumstance that the Belgæ peculiarly so called, as being the chief and ruling colony of that people, were seated in the surrounding province, and *Sorbiodunum*, now Old Sarum, was their capital city.

Yet Stonehenge will be found on inspection to fall short of the ridiculous exaggerations of antiquaries, impressing every traveller, after the perusal of such accounts, with disappointed ideas of smallness and want of importance. Such ideas are however unjust, as it is a noble and curious monument of early times. There appear to be three principal circles of stones, the outer connected together by an uniform pavement, as it were, at the top, to which the chiefs might ascend and speak to the surrounding crowd. A second circle consists of detached upright stones, about five feet in height; while the highest are eighteen. Within this is a grand oval, originally consisting of five trilithons, of two huge stones crossed by another at the top; and inclosing smaller stones, which appear to have been seats, and a large flat stone commonly called the altar, but which seems to have been the throne or seat of judgment. There is besides a very high stone towards the north-east, or rising sun; and near this a large flat stone encompassed with a mound, which is probably the real altar on which human victims were sometimes sacrificed. There are also two other stones at a considerable distance to the east and west, and the whole seems to be in the midst of a very extensive circle, marked by an earthen embankment, almost effaced by the lapse of years, and affording sufficient space for all the males of the tribe or nation. The largest stones are of silicious sand-stone; but the altar, or rather throne, is calcareous sand-stone [19]. The smaller stones are of grunstein, or hornblend mixed with felspar. On its first erection

[17] Landnama Saga, &c. &c. [18] Germ. xi. Hist. v. 17. [19] Townson's Tracts, 228.

the appearance must have been striking, the large stones being of a pure white, and the smaller black.

Similar circles of stone, but far inferior in size, are found in many parts of Great Britain and Ireland; and several undoubtedly as late as the Danish inroads and usurpations, the practice being continued by that people at least till their conversion to Christianity, in the tenth and eleventh centuries. Some of the smallest, as we learn from the northern antiquaries, were merely places of family sepulture. At a later period the circles of judgment, which had been polluted with human sacrifices, and other Pagan rites, were abandoned; and the great courts were held on what were called *Moot-hills*, or hills of meeting, many of which still exist in the British dominions, and in the Netherlands. They commonly consist of a central eminence, on which sat the judge and his assistants; beneath was an elevated platform for the parties, their friends, and *conpurgators*, who sometimes amounted to a hundred or more; and this platform was surrounded with a trench to secure it from the access of the mere spectators. Of the other monuments of this period, a more brief consideration must suffice. When a monarch, or distinguished general, was buried, a barrow or hillock was erected to preserve his name and memory to future ages: the size depending on the reputation of the person, which attracted a smaller or larger number of operators. Such monuments are very ancient, and even to this day denote the sepulchres of some of the heroes of the Trojan war [20]. In later times a large single stone erected was esteemed a sufficient memorial: such single stones also sometimes appear as monuments of remarkable battles, or merely as boundaries. The caves are familiar to most nations in an early state of society.

ROMAN.] The Belgic relics are followed by those of the Romans, which are mostly objects of mere curiosity, and rarely throw the smallest light upon the page of history. Amphitheatres are said to be still visible at Silchester, in Hampshire, and some other places, as Dorset and Cirencester. The Roman castle at Richborough, the ancient Rutupiæ in Kent, presents considerable remains of a massy wall, cemented with surprising firmness. The Roman ruins in this country are commonly composed of stone or flint, with strata of flat bricks at considerable intervals. The mosaic pavements, hypocausts, &c. are generally the remains of the villas of opulent Romans, scattered over the country. The greatest number of Roman inscriptions, altars, &c. has been found in the north, along the great frontier wall, which extended from the Western Sea to the estuary of the Tyne. This vast wall is justly esteemed the most important remain of the Roman power in England, as that of Antoninus is in Scotland. The extent was about 70 miles, and its construction, forts, &c. have been illustrated by the labour of several antiquaries.

Numerous are the more minute relics of the Romans in England, as coins, gems, weapons, ornaments, and the like; among which, however, the silver dish, belonging to the Duke of Northumberland, deserves especial attention. One of the grand causes of the civilization, introduced by that ruling people into the conquered states, was the highways, which form, indeed, the first germ of national industry, and without which neither commerce nor society can make any considerable progress. Conscious of this truth, the Romans seem to have lent particular attention to the construction of roads in the distant provinces; and those of England, which may still be traced in various ramifications, present a lasting monument of the justice of their conceptions, the extent of their views, and the utility of their power. A grand trunk, as it may be called, to anticipate the language of our inland navigations, passed from the South to the North, and another to the West, with branches in almost every direction that general convenience and expedition could require. What is called the Watling-street, led from

[20] Chevalier, Dallaway, and Morritt.

Rich-

Richborough, in Kent, the ancient Rutupiæ, north-west through London to Chester. The Ermin-street passed from London to Lincoln, thence to Carlisle, and into Scotland, the name being supposed to be corrupted from *Herman*, which means warrior, as the chief wars lay in the North. The Fosse Way is supposed to have led from Bath and the western regions, north-east, till it joined the Ermin-street. The last celebrated road was the Ikenild, or Ikneld, supposed to have extended from near Norwich, south-west into Dorsetshire [21].

SAXON.] The Saxon antiquities in England are chiefly edifices, sacred or secular; some churches remain which were for the most part constructed in the Saxon period; and some are extant of the tenth, or perhaps the ninth, century. The vaults erected by Grimbald, at Oxford, in the reign of Alfred, are justly esteemed curious relics of Saxon architecture. Mr. King has ably illustrated the remains of the Saxon castles. The oldest seem to consist of one solitary tower, square or hexagonal: one of the rudest specimens is Coningsburg castle, in Yorkshire; but as that region was subject to the Danes, till the middle of the tenth century, it is probably Danish. Among the smaller remains of Saxon art, may be mentioned the shrines for preserving relics, which some suppose to present the diminutive rudiments of what is styled the Gothic architecture; and the illuminated manuscripts which often afford curious memorials of the state of manners and knowledge.

DANISH.] The Danish power in England, though of considerable duration in the North, was in the South brief and transitory. The camps of that nation were circular, like those of the Belgæ and Saxons, while those of Roman armies are known by the square form: and it is believed that the only distinct relics of the Danes, are some castles to the north of the Humber, and a few stones with Runic inscriptions.

NORMAN.] The monuments styled Norman, rather to distinguish their epoch than from any information that Norman architects were employed, are reputed to commence after the conquest, and to extend to the fourteenth century; when what is called the rich Gothic began to appear, which, in the sixteenth century, was supplanted by the mixed; and this in its turn yielded to the Grecian. In general the Norman style far exceeds the Saxon in the size of the edifices, and the decoration of the parts. The churches become more extensive and lofty, and though the windows retain the circular arch, they are larger and more diversified; the circular doors are festooned with more freedom and elegance; and uncouth animals begin to yield to wreaths of leaves and flowers. The solitary keep, or tower, of the Saxon castle, is surrounded with a double wall, inclosing courts and dwellings of large extent, defended by turrets and double ditches, with a separate watch-tower, called the Barbican. Among others, the cathedrals of Durham and Winchester, may be mentioned as venerable monuments of Anglo-Norman architecture; and the castles are numerous and well known. What is called the Gothic, or pointed arch, is generally supposed to have first appeared in the thirteenth century; and in the next it became universal in religious edifices. The windows diffused to great breadth and loftiness, and divided into branching interstices, enriched with painted glass, the clustering pillars of excessive height, spreading into various fret-work on the roof, constitute, with decorations of smaller note, what is called the rich Gothic style, visible in the chapel of King's College, at Cambridge, and many other grand specimens in this kingdom. The spire of those edifices at length corresponds with the interior; and begins about the thirteenth century, to rise boldly from the ancient tower, and diminish from the sight in a gradation of pinnacles and ornaments.

[21] Gough's British Topography, i. 10.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastic Geography. — Government. — Laws. — Population. — Colonies. Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE church of England is established upon a most peculiar basis, and truly characteristic of a moderate and judicious nation. As in the political system, extremes, the usual concomitants of inexperience, are carefully avoided, and despotism or anarchy, from whatever source, monarch, nobles, or people, prevented, as far as human wisdom can devise; so in the church, while the papal power, and other Catholic chains are proscribed, the other extremes, tending to loose democracy, are equally avoided. It is the only reformed church which has retained the episcopal form in its ancient splendour; for though Bishops may also be found in Denmark, Sweden, Norway, &c. they are rather inspectors of the conduct of the clergy, and of the modes of education, than prelates endowed with senatorial rank and dignity. In England, on the contrary, the Bishops are peers of parliament, and have the style and importance of nobility. Yet the creed of the English church is rather Calvinistic than Lutheran. But the special tenets of the English church are sufficiently explained in the thirty-nine articles; and a brief idea of its government will be more pertinent to the present purpose.

CHURCH OF ENGLAND.] The orders of bishops, priests, and deacons, compose the body of the clergy. Upon his dispute with the Pontiff, to avoid any claims whatever of superiority, Henry VIII. seized the title of Supreme Head of the National Church, and issued several medallions, with inscriptions in Hebrew, Greek, and Latin, to commemorate this new prerogative, which is, indeed, important, as it blends the ecclesiastic with the civil administration. Next in dignity and power are the Archbishops of Canterbury and York. The first is styled Primate of all England, and precedes all persons, except the Royal family. He has the power of probate of all testaments within his province, and of granting several dispensations concerning benefices: he has, also, four courts of judicature, that of Arches, of Audience, of Prerogative, and of Peculiars. The Archbishop of York is styled Primate of England, but in prerogative, and jurisdiction yields greatly to the first Metropolitan[1]. The Archbishopric of York extends over the counties of Northumberland, Durham, Cumberland, Westmorland, Cheshire, Lancashire, and the Isle of Man, besides its proper and peculiar diocese, of the greatest part of Yorkshire and Nottinghamshire. That of Canterbury comprises the other counties; and has its peculiar diocese, being a great part of Kent. The archiepiscopal office is rather a dignity than a jurisdiction, and the primates rarely interfere in any dioceses except their own. They are appointed by the King, in the same manner as the bishops, by what is called a *Congé d'Elire*.

BISHOPS.] Upon any vacancy in an episcopal see, the dean and chapter apply to the King, who returns a *Congé d'Elire*, naming the person to be chosen[2]. A chapter of the

[1] Chamberlayne, p. 3. 38th edit. 1755, 2 vol. 8vo.
[2] Chamberl. 140. Blackstone, b.i. c.11.

preben-

prebendaries is then summoned by the dean, and they are constrained under the penalty of a *præmunire* to elect the person nominated. The solemnity is completed by the royal assent, under the great seal, and by the confirmation and consecration, performed by the metropolitan, or in his name. The prelate afterwards pays homage to the King for his temporalities, or the baronies connected with the see; and compounds for the first fruits, that is the revenue of the first year, which is paid to the corporation for increasing the benefices of the poor clergy. The omission of consecration is the only difference when a bishop is translated to another see; and when an archbishop is nominated, the King appoints four or more bishops to officiate at the confirmation.

The bishop alone may ordain deacons and priests, dedicate churches and burial grounds, and administer confirmation[3]. In former times episcopal jurisdiction extended to the licensing of physicians, surgeons[4], and schoolmasters, and to the conjunction of small parishes. At present it chiefly embraces questions of births, marriages, deaths, and testaments, and any delinquencies of the clergy; to which body, indeed, their attention is now chiefly confined, and they rarely, except in parliament, interfere in secular subjects. The Bishop of Sodar and Man has no place in parliament. All the other bishops are barons, and peers of the realm, by three different claims; in right of the baronies attached to their sees, as barons summoned by writ, and as barons by patent, a form which accompanies their consecration[5]. Their privileges approach the regal; they are the sole judges in their own courts, and issue writs in their own names, not in the royal stile used by other courts. They can depute their authority, which no other judge can; and their episcopal power of conferring orders, &c. may be exerted in any Christian country, while lay peers are only acknowledged in the country whence they derive their dignities[6]. To pass other more minute privileges, the Bishop of London, as presiding over the capital, has the precedence of all the others, and the colonies are regarded as in his diocese. The see of Durham constitutes a county palatine, with great powers and prerogatives: the authority and patronage of the bishop are of course very extensive, and even the King's judges only sit in his diocese by his permission. The Bishop of Winchester is the third in dignity, but esteemed the first in opulence, as the large civil list of Durham, while it adds power, diminishes revenue. These three bishops precede all the rest, who take place according to the seniority of consecration.

PREBENDARIES.] To every cathedral in England belong several prebendaries as canons, and a dean, so styled as is said, (*Decanus*,) because he antiently presided over ten canons[7]. In the old quaint language he was called one of the bishop's eyes, while the archdeacon, who had charge of the deacons, was reputed the other. The dean and chapter of prebendaries assist the bishop in ecclesiastic affairs. The prebendaries are so styled from the prebend, or *pars præbenda*, portion of land or income allotted to them; and with the dean form a body, college, or corporation; and they have several privileges superior to the common or minor canons. At the reformation their salaries were mostly converted into money, but those of Durham preferred the ancient portions of land, which having prodigiously increased in value, they are now styled golden prebends, being worth from 800*l.* to 1200*l.* a year, while the bishop, out of 9000*l.* a year, has to support a great and unavoidable expenditure.

ARCHDEACONS.] The next order is that of the Archdeacons, amounting in all to about sixty; their office is to inspect the moveables of the churches, to reform slight abuses,

[3] Chamberl. p. 63.

[4] Even now any person obtaining a licence from the court of the bishop of his diocese may practise: and the Archbishop of Canterbury may confer a diploma of M. D.

[5] Chamberl. 67. Blackstone, b. i. c. 11.

[6] Chamberl. 68. The Catholics deny the validity of their ordination.

[7] Ibid. 69.

and

and to induct into benefices. Arch-priests, who, on the continent, share the labours of the Archdeacon, on a smaller scale, being superintendants over a few parishes, were in England also styled rural deans, a class still common in some parts of England, where they nearly supersede the archdeacon in the duties of his office. Subdivisions of government are so much controuled by the very nature of human affairs, that the power of the Archpriest almost corresponds with the Scottish presbytery, while the provincial synods are similar to bishoprics.

Of the clergy in general, the lowest order is that of deacons, whose office formerly was to superintend the poor; the ancient donations to the church being always assigned in three divisions, one to the poor, another for repairs, and the last for the clergy. At present the deacon's office is restricted to baptism, to reading in the church, and assisting the priest at the communion, by handing the cup only. Deacon's orders cannot be canonically received before the age of twenty-three years, those of a priest require twenty-four, and a bishop must be thirty. The curate is a clergyman appointed to officiate for another, and is so named from his having the care of souls; hence the French rather apply the term to the rector. If the predial, or great tythes of the parish, be impropriated, or converted into secular hands, the priest is termed a vicar, a name originally implying that they were the *vicarii*, or deputies of the rector; but if the tythes be entire the priest is styled rector. The churchwardens superintend the repairs and decorations of the church, and the requisites for divine service, and collect the alms of the parishioners; they are annually elected at Easter, and have sometimes sidesmen, a kind of assistants. The sacristan, corruptly called sexton, originally had the care of the furniture and plate of the church; and by a still greater corruption, the appellation is now applied to the grave-digger, when it ought to have been conferred on the parish-clerk.

The clergy in general enjoy some peculiar privileges. Their goods are free from tolls in fairs and markets: they cannot be compelled to any office, civil or military: they are only amerced according to their temporal estate: nor are they assessed for a robbery committed in the hundred, or for watching, warding, highways, &c. &c.

Convocations.] Ecclesiastical courts still retain considerable power: the convocation, consisting of the archbishops and bishops, with a lower house of 150 members, only meets for the sake of form; but have not been allowed to deliberate since the reign of Anne[8].

Courts.] Next in dignity is the court of delegates, acting by a special commission under the great seal; and to whom an appeal lies from the highest metropolitan court. The court of arches is so styled, because it was held in the arches of the church of St. Mary-le-bowe, London, but now in the great hall, Doctors' Commons; only doctors of the civil law are allowed to plead[9]. The court of audience is always presided by the archbishop himself, who decides any doubts concerning the admission to benefices, and dispensation of the bans of matrimony.

The next court is that of Prerogative, which judges of estates fallen by will, or intestate; the Prerogative-office is likewise in Doctors' Commons. The Court of Peculiars refers to several peculiar parishes, exempt from the jurisdiction of the bishops, but here amenable: the judges are sole and without jury.

[8] Chamberl. 70, 1. 76. Gough's Cam. i. 147. Blackstone, p. 111. c. v.

[9] The degrees are only taken at the Universities, yet they chiefly practise in London, a college being purchased for their use, by Dr. Henry Hervey, where they communed together in a collegiate manner; whence the name of Doctors' Commons, more properly called the College of Civilians, near St. Paul's, which being consumed in the fire of London, was rebuilt in 1672. The Procurators, or Proctors, of these courts, are admitted by the Archbishop's mandate, acting as the Solicitors in other courts.

The

The ecclesiastical geography of England may be seen in the following table:

Province of Canterbury.

The Archbishop, Canterbury, and part of Kent.

1. Bishopric of London, containing Essex, Middlesex, and part of Hertford.
2. Winchester.—Surry, Hampshire, Isles of Wight, Jersey, Guernsey, and Alderney.
3. Litchfield and Coventry.—Stafford, Derby, and part of Warwick and Shropshire.
4. Lincoln.—Lincoln, Leicester, Huntingdon, Bedford, Buckingham, and part of Hertford.
5. Ely.—Cambridgeshire.
6. Salisbury.—Wilts and Berkshire.
7. Exeter.—Cornwall and Devon.
8. Bath and Wells.—Somersetshire.
9. Chichester.—Sussex.
10. Norwich.—Norfolk, Suffolk, and a small part of Cambridge.
11. Worcester.—Worcester, and part of Warwick.
12. Hereford.—Hereford, and part of Shropshire.
13. Rochester.—Part of Kent.
14. Oxford.—Oxfordshire.
15. Peterborough.—Northampton and Rutland.
16. Gloucester.—Gloucestershire.
17. Bristol.—The City of Bristol, part of Gloucestershire, and County of Dorset.
18. Landaff.—Glamorgan, Monmouth, Brecknock, and Radnor.
19. St. David's.—Pembroke, Cardigan, and Caermarthen.
20. St. Asaph.—The greatest part of Flint, Denbigh, and Montgomery, and some part of Shropshire.
21. Bangor.—The counties of Anglesey, Caernarvon, Merioneth, and part of Denbigh and Montgomery.

Province of York.

The Archbishop, the counties of York and Nottingham.

22. Durham.—Durham and Northumberland.
23. Carlisle.—Great part of Cumberland and Westmorland.
24. Chester.—Cheshire, Lancashire, Richmondshire (which is part of Yorkshire); with part of Cumberland and Westmorland.
25 Isle of Man.

The valuation in the king's books are omitted, because even the comparative valuation would lead to ideas wholly erroneous. Several changes have taken place in the number and situations of the bishoprics since Christianity was first established in this country, but these rather belong to the province of the antiquary.

Those who differ in tenets or forms from the established church may, in general, be styled Dissenters, though the term be more strictly applied to the Presbyterians and Independents. The other principal classes of dissidents, are the Papists, Methodists, Quakers, the Baptists, the Swedenborgians, and the Unitarians; the last class denying the Trinity, and believing only in one God, is now intermingled with the first, who have considerably relaxed the strictness of their discipline. The Independents assert, that each congregation has a right to regulate itself, while the Presbyterians unite churches under various divisions, provincial and national. The clerical aristocracy of the Presbyterians was obtruded with great haughtiness upon the English nation, during the civil war in the last century, and was rendered the more odious, because it admitted

no toleration: hence the English found that they had only exchanged one yoke for another, or rather ease for slavery, as ten presbyters amounted to one bishop, and superadded the petulance and moroseness of individual inquisitors. Milton, and other friends of freedom, soon began to satirise the whole sect, and to fly for refuge to these Independents, whose benevolence or address granted universal toleration. To this body Cromwell lent an iron hand; and, after annihilating the Presbyterian power in England, in a great measure subverted that of Scotland. The intolerant spirit of the Presbyterians originated with their apostle Calvin, whose cruelty to Servetus was balanced by surprising talents in clerical polity; it rendered their power singularly adverse to letters and taste, and no man of science who has studied the literary history of this country, would wish for the revival of such domination. But at present Calvin would not recognize his disciples, as they have abandoned their polemical thistles, and cultivate the most elegant productions of the literary field. The Papists used chiefly to abound in Lancashire, Staffordshire, and Sussex; they had potent chiefs, and were a formidable body; but the passage from superstition to contempt is so natural, that many have fled to the opposite extreme. Those who retain their faith, generally display moderation, which has been naturally increased by the late privileges extended to them.

The Methodists are extremely numerous and respectable. They seem to allow the propriety of the creed and government of the church of England; but they require a more strict life, more fervent devotion, and more frequent and serious attendance upon divine worship, than is enforced by the establishment. A philosopher may well envy the mild creed, and universal charity, or fraternal love of the Quakers; while he must allow with a sigh, that a nation of quakers could not exist, except all nations were of the same persuasion. The Baptists disown infant baptism, and bathe the adult disciple. The learned Whiston admired their tenets, and their practice of anointing the sick with oil, which, as he believed, operated with miraculous power. The Swedenborgians derive their name from the Baron Swedenborg, a nobleman who exchanged his native country of Sweden for a residence in England. After having published two folio volumes in the Latin language, upon the art of exploring mines, he was seized with a violent fever, and with great difficulty recovered. In his disordered imagination he seemed to maintain a frequent intercourse with the spiritual world; and he has published twenty or more vast volumes in quarto, also in the Latin tongue, replete with curious metaphysical ratiocination, interspersed with visions, which are sometimes narrated with high poetical spirit and elegance. His system is so much adapted to the strongest propensities of human nature, that his disciples increased with great rapidity. His chief tenets are, that there is but one person of the Deity, namely, the Lord Jesus Christ, that the day of judgment is already passed, &c. &c. but his most alluring tenets partake of Mahometanism, in representing the connubial pleasures, and the other enjoyments of a future world, which he paints as similar to this state of existence, but far exceeding it in the gratifications of every sense, whether mental or corporeal.

For the following observations on this important subject the author is indebted to a well-informed friend.

"Although the denominations *Presbyterian* and *Independent* are still applied to two large bodies of Dissenters, yet it may be questioned whether either of these parties coincides exactly in principles and discipline with their predecessors. With regard to the first, it is certain that in both respects they have deviated widely from their ancestors. With the exception of one only in the most northern part of England, there is at this time *no English Presbytery;* the English Dissenters, who still go by the name of Presbyterians, have assumed the congregational independence of the other sect, and each society is now governed, by different methods indeed, by its own members exclu-

sively, without being in the least subjected to the domination or interference of any other, or of any synod of ministers. The congregations still denominated Presbyterian, have also changed their religious creed. None of them now are Calvinistic, and they differ widely from each other; some being Arminian, others Arian, others Unitarian, but most of them composed of a mixture of these; strict uniformity of opinion being seldom found in large societies.

The Independents have adhered more closely to the discipline of their ancestors, though among them shades of difference appear in their internal management. They are now universally Calvinists, though some hold the doctrines of the reformer less strictly than others.

The Baptists, who form the next great class of English Dissenters, are divided into two bodies, which are denominated Particular and General Baptists. The former are Calvinists, and differ from the Independents only on the subject of baptism. The General Baptists derive their name from being advocates of general redemption — that is, being Arminians. Many of them are now Sabellians, Arians, and Unitarians; but still all of them oppose the baptism of infants.

It is to be observed, that what is called the 'General Body of Dissenters in London' consists of these three classes only: that is, the Presbyterians, Independents, and Baptists, including the General and Particular Baptists. They hold a friendly conference once a year at the great room in Dr. Williams's library, Red-Cross-street, which is lent to them for the purpose by the trustees. It is at these annual conferences, or at special meetings of the same denominations convened for the purpose, that all public measures relating to the Dissenters, such as addresses to the throne, &c. originate, or are carried on. Upon occasions of importance, however, they advise with their brethren in other parts. The congregations of these denominations have besides a body of deputies, two from each, who are deputed as a standing committee to watch over their civil rights, with power to resort to legal prosecutions in defence of any privilege which may be encroached upon by ignorant or bigotted persons.

The *Methodists* are divided into two classes, the followers of Whitfield, who are Calvinists of the strictest kind, and of Wesley, who are Arminians. Both classes, although they had separate chapels for worship, which they conducted on the plan of the generality of Dissenters, without a set form or liturgy, retained their allegiance to the Church of England, by remaining in communion with it, and refraining from administering the Lord's Supper in their chapels. I believe the Whitfieldean Methodists still preserve this rule. A short time since a grand schism took place among the Wesleyans on the subject. The seceding party, consisting of about one half, more or less, of the body, separated on the ground of a total nonconformity with the established Church, and have introduced the practice of administering the ordinance of the Lord's Supper in their own places of worship, as done by the other Dissenters. They still retain generally, however, the discipline of Wesley in their internal government.

The Unitarians until lately were only found scattered as individuals in other congregations. Of late, however, their number has considerably increased, and there are at this time a considerable number of congregations avowedly Unitarian in different parts of the country, and several in the metropolis and its neighbourhood.

The appellation *Ana*-baptist is not admitted by the respectable body to whom it is here applied as just or appropriate. It was originally applied to them by way of reproach as *re*-baptisers of those whom they received into their communion by immersion. As however they did not consider *infant sprinkling* to be a Christian ordinance, or the baptism which Christianity required, they regarded their own baptism as the only one which the party had really received. In their opinion, therefore, he was not *ana*-baptised. The term Anabaptist, as it ought, is now discarded, and that of Baptist

properly substituted in its stead. It is also to be remarked, that none of the children of Baptists are sprinkled in their infancy, so that the *only* baptism they receive is that by immersion when adults."

The constitution of England, the peculiar boast and glory of the country, and an object of admiration to other states, though attempted to be described by Montesquieu, has been little understood by foreigners, for it presents such an infinite number of practical ramifications, and is so intimately connected with the spirit and manners of the people, that a number of years would be required to feel and study its real effects; and even after the longest preparation, the best description must be but a portrait, devoid of life and of vital expression. A faint sketch alone can be here expected, and the fidelity of the outline must compensate for the want of detail.

The constitution of England is a limited monarchy, counterpoised by two senates, one of hereditary peers, the other of representatives, who are, or ought to be chosen by the people. Such senates were not unknown to the other European nations, and have rather sunk into disuse from their own perversion of their power, than from the despotism of the sovereigns. In France, long before the States General were discontinued, their meetings had been execrated by the people; as instead of defending their privileges, the members only attended to their own private interests, and imposed exorbitant taxes, which were consumed by the greedy courtiers, with very small profit to the royal treasury. Hence, far from incurring any blame, the Kings of France acquired great popularity, and were idolized by the nation, for delivering them from the scourge of a venal senate, which only served to increase oppression and expenditure. Many other instances might be adduced to prove, that the very existence of such senates depends upon their forming one body and soul with the nation at large; but it will be sufficient to mention the similar suicide which happened in Denmark, in the last century, when the people, disgusted with the selfish views of the senate, requested the monarch to annihilate it, and assume the entire power: and the absolute form of government has since continued, though modulated by several councils, which have the effect without the form of the senate. The English senates, on the contrary, owe their stability to a general concurrence with the popular voice; arising partly from their form, and partly from a sympathetic and gradual connection which pervades all ranks.

KING.] Our lawyers pronounce that the King of England unites in his person the dignity of chief magistrate, with the sanctity of a priest: and the title of Sacred Majesty appears to have commenced when he assumed the function of Head of the Church. So august is his person, that even to imagine or intend his death, is a capital offence, when in all other cases the deed alone is punishable. Fortescue, in his old emphatic language, has described the office of the King of England to be "to fight the battles of his people, and to judge them with most righteous judgment." At his coronation he solemnly swears to govern his people according to parliamentary statutes, and the law of the country; to maintain the protestant religion; and to preserve the legal rights and privileges of the bishops, clergy and church[1].

The royal prerogatives have never been strictly defined; and perhaps it is preferable in a government, which aspires not to ideal perfection, but to practical benefit, that they should be capable of great energy and extent; as, in cases of emergency, even republics have been forced to entrust absolute power to a dictator. The acknowleged prerogatives are chiefly to declare war and to make peace, a power upon which the whole of public prosperity may be said to depend; to form alliances and treaties; to grant commission for levying men and arms, and even for pressing mariners; for the power of impressing into the land-service, was abandoned in the reign of William and

[1] Chamberl. 52. Delolme, 90.

Mary;

Mary; yet in cases of great peril, there can be little doubt but the King, in concurrence with Parliament, might order every man to assume weapons of war. To the King also belong all magazines, ammunition, castles, forts, ports, havens, and ships of war: he has also the special management of the coinage, and determines the alloy, weight, and value[2]. The prerogative also extends to the assembling, adjournment, prorogation, and dissolution of Parliament; and to its removal to any place. The royal assent is necessary to impart validity to an act of parliament, though it has never become necessary to withhold it, since the management of the senate has become the professed office of the minister. The King may not only increase the House of Peers, but that of Commons, by empowering any town to send burgesses to parliament; yet the latter prerogative appears to have become obsolete, for in the reign of Charles II. the interference of the legislature was esteemed necessary to enable the city of Durham to send representatives. The Sovereign also enjoys the nomination of all officers on sea or land; of all magistrates, counsellors, and officers of state; of all bishops, and other great ecclesiastical dignitaries; and is not only the fountain of honour but of justice, as he may pardon any offence, or mitigate the penalty. As Head of the Church he may call a national or provincial synod, and with its consent enact canons, either relating to faith or practice. The other prerogatives are more minute, and more adapted to jurisprudential enumeration. The more important exceptions are, that he cannot enact new laws, or impose new taxes, without the consent of both houses of parliament.

PARLIAMENT.] The Parliament, or national council, claims the next consideration. Originally both the Nobles and the Commons met in one house; and as the greatest national events depend, not on design, but on chance, or, more properly, the will of heaven, it is not impossible that the mere inconvenience of not finding halls large enough for our then ambulatory parliaments, might have occasioned the division into two houses, unknown in any other country, and which in fact may be regarded as the sole foundation of English liberty. The House of Peers may be said to have existed from the earliest period of our history. Concerning the Commons, authors differ in opinion; the Whigs asserting that they formed a part of the *Wettena-Ge-Mot*, or the assembly of sages, and it is not improbable that commoners of distinguished ability, particularly in the laws, were admitted to that great council, which chiefly consisted of the military chiefs. On the other hand it seems improbable that delegates from towns should have been then known, as the idea seems too abstract and complex for a rude people. The Tory writers assert that there is no appearance of the Commons, nor any authority for their parliamentary existence, prior to the 49th of Henry III. when the first records concerning them arise. However this be, the present constitution of the Parliament of England may certainly be traced to near the middle of the thirteenth century; but it remains unknown at what precise time happened the important separation of the Commons from the Peers.

PEERS.] The peers of England only require the full age of twenty-one years, to become hereditary senators in their several degrees of Duke, Marquis, Earl, Viscount, and Baron, formerly created by investiture, or symbolic forms, but latterly by patent[3]. The Duke is so styled from the Latin *dux*, a leader or general; the title of Marquis springs from the Gothic language, and implies the commander of a march or frontier: the Earl and Baron are also from the Gothic, and merely imply eminent men; the Viscount is Latin, and signifies the lieutenant of the count or earl. The various orders of nobility have been preserved more pure in England than in any other country; owing partly to the laws of primogeniture, partly to their senatorial office, partly to the institution of the college of heralds. In Germany, and some other countries, the nobility has fallen into comparative degradation, from the extension of

[2] Chamberl. 48, &c. Blackstone, b. i. c. iii. &c. [3] Chamberl. 168. Blackstone, b. i. c. ii.

the

the title to all the sons, and from the presumption of adventurers. The peers are privileged from personal arrest, except for treason, felony, and a few other high offences. They are not only exempt from serving in juries, but must be tried by a jury of peers, who return their verdict, not upon oath, but upon their honour. They are addressed by the ceremonial form of *My Lord*, corresponding with the French *Mon Seigneur ;* and the law is so watchful of their reputation, that the statute of *scandalum magnatum* was enacted, to prevent any scandal against them, or discord between them and the people. Every peer may appoint a proxy to vote for him in the senate, a privilege unknown to the Commons.

In the House of Peers is placed the royal throne; but the Monarch rarely appears, except at the meeting or prorogation of parliament, when he proceeds to the house in great state; the attendance of the Commons is demanded, who stand below the bar, and the King pronounces his speech, generally the composition of the minister. The arrangement of the House of Peers is well conceived, and produces a grand effect. The wool-sacks upon which the chancellor, and the judges when called for their advice, are seated, constitute a remarkable feature, esteemed symbolic of the staple commodity of the country. The appearance is yet more magnificent, when the peers sit as judges in Westminster-hall; the greatness of the persons, and the solemnity of the occasions, exciting impressions of singular sublimity.

Commons.] The House of Commons consists of knights, citizens, and burgesses, chosen by counties, cities, and boroughs, in consequence of royal writs directed to the sheriff. To restrict the tumult of popular election, it was enacted by Henry VI. that none should vote for a knight of the shire, except freeholders worth forty shillings a year, which at the present value of money, may be computed at twenty or thirty pounds. It is singular that copyholders were excluded. The elections for the cities and boroughs, are regulated by their charters and customs; sometimes only a few citizens have a right to poll, sometimes all the inhabitants. The members, and their menial servants, are exempted from arrest in civil causes, on their journey to parliament, during their attendance, and on their return; nor can they be questioned out of the house for any sentiment there uttered. It has been disputed whether members be not rather to be regarded as representing the people at large, than as interested in particular districts, and obliged to listen to the voice of their constituents, whose private interest might, perhaps, interfere with the general benefit. The Commons form the grand inquest of the realm, and may impeach or accuse the greatest peers; but their chief privilege, and upon which their whole power entirely depends, is the levying of money, in which they are deservedly so jealous that they will not permit the smallest alteration in a money-bill. This amounts to an almost absolute *veto* on any public measure, and especially on war. The House of Commons consists of 558 members*; but by sickness, important offices, and indispensable avocations, the House rarely presents above two-thirds of the number. A Speaker, or President, is chosen at the meeting of every new parliament; but is usually continued from one to another, as the office requires a complete and ready knowlege of the forms, and considerable abilities.

Acts of Parliament, which constitute the statute-law of the kingdom, may originate in either house, though they commonly make their first appearance in the House of Commons. The procedure is in the following form. Any member may move for a *bill*, (the term *act* is not applied till all the stages be complete,) which being seconded, the mover, and others who support him, are ordered to prepare it. When presented, and leave given to bring it to the table, it is read by the clerk, the clauses are debated, and a day appointed for a second reading. After it is again read and debated, it is *committed*; that is, if important, it is referred to a committee of the whole house, during which the

* Since the union with Ireland 658.

speaker

speaker leaves the chair, and another sits at the clerk's table as chairman: or, if little momentous, to a private committee, which meets in a separate chamber. When every paragraph has been carefully examined, every clause put to the question, and the blanks and amendments completed, the chairman makes his report. The amendments and added clauses are then read, and the speaker puts the question, whether they shall be read a second time; and being read and debated, the bill is ordered to be ingrossed, that is, fairly written on parchment. After the third reading, the speaker, holding the bill in his hand, enquires if it shall pass the house; if agreed to, the clerk writes on the bill *Soit baillé aux seigneurs*, or if in the House of Lords, there is written, *Soit baillé aux communes*. If the bill be rejected, it cannot be again moved during that session; and it is an usual mode to move that the bill be read in three months, when by exceeding the limits of the session, it amounts to a less invidious rejection. An advantage of the committee of the whole house is, that the members may answer and reply; whereas in the constituted senate no member can speak twice, except in explanation. A silent vote in the House of Commons, is given by *aye* and *no*; in the House of Lords by *content* and *not content*.

The proceedings in the House of Lords are nearly similar; and if a difficulty arise, a conference is demanded, in an appropriated chamber, where it is debated; and either compromised, or the bill abandoned. When a bill has passed both houses, the King, either in person or by commission, imparts his consent, the clerk repeating to public bills *Le Roy le veut;* if private, *soit fait comme il est desiré*. The denial of the royal concurrence used to be *Le Roy s'avisera*.

The attention of the nation is chiefly bent upon the parliament, when grand political questions arise concerning war and peace, or affecting the constitutional liberties of the land. On such occasions the utmost powers of eloquence are exerted; and specimens produced worthy of Greece or Rome. Such trials of elocution may either arise in the stages of a bill as before described; or by the special motion of a member for some particular object, or address to the throne.

Adjournments may frequently happen in one session, and the business is continued and resumed; but a prorogation terminates the session, and the bills not then passed must recommence their whole progress. By a modern statute, the death of the King does not, as formerly, terminate the parliament: which, on the contrary, had it been previously dissolved, may, on that event, resume its functions.

The forms of the House of Commons are observed with great punctuality, and it is the special duty of the speaker to superintend their enforcement; a precaution indispensible in a popular assembly, as we may judge by having seen the senate of a neighbouring nation occasionally degenerate into a bear-garden. The House of Commons is deservedly esteemed the very palladium of English liberty; they hold what is called the omnipotence of parliament, and if that power were not guided by principle, the ruin would be universal. Not the general execration of the human race, not the infamy eternized by the historic page, could ever avenge the injury done to their country; if instead of protecting the lives, properties, and liberties of the nation, by whom they are chosen for that sole purpose, they should, for the sake of perishable wealth or honours, become the betrayers of their brethren, and the sycophants of despotism, of whatever kind or description.

Such are the three grand component parts of the English constitution; but, perhaps, its most beneficial and popular effects arise from the mode of administering justice and other ramifications. For the sake of connection, however, it is proper first to consider the Privy Council, and the other divisions of the government.

PRIVY COUNCIL.] Under whatever form of monarchy, Privy Councils are found to be coeval with the state. It is impossible for one man, however transcendent his abilities, to manage

manage the various business of the government. In the most barbarous periods, a few men of eminent birth or wisdom have been selected by the sovereign for his assistants. While the national assembly only met on solemn occasions, the advice of the privy council was ready on every emergency, and it hence became the chief engine of regular and continual authority. In England the powers of the privy council continue to be very extensive, even in modern times. At more ancient periods it acted in a high juridical capacity, was wont to be consulted, even by the judges, in decrees of great consequence, and the parliament used to transmit several important topics to its sole consideration[4]. At present it is chiefly employed in deliberations on affairs of sudden emergence; on peace and war; and special provinces of the royal prerogative. The members are chosen by the King; and on changes of administration are seldom erased, though the members in opposition never attend. They are styled Right Honourable, and are sworn to observe secrecy: the lowest at the board pronounces his opinion first, and the King, if present, concludes with declaring his judgment. A privy council is seldom or never held, without the presence of at least one of the secretaries of state; who, till the reign of Elizabeth, used to stand by the royal chair, but have since sitten at the board as privy counsellors. Their office is of the highest trust and importance, and is at present divided into three departments. Dependent on the secretaries of state is the state-paper office at Whitehall, which has in charge the writings of state and council, dispatches, negociations, and the like, from ancient times, thus presenting most important documents of history.

Ministry.] Even at an early period, when the monarch maintained in his own hands a great share of the administration of justice, and of the actual exercise of authority, there were intervals of absence or recreation, in which he delegated the chief management of business to some select person, usually an ecclesiastic, whose cultivated talents qualified him for such an important trust. To lend more weight to this substitute, he was commonly appointed chancellor, or chief administrator of civil justice, was president of the House of Peers, and supported the royal influence in that great assembly. But in later times, when the management of the House of Commons became the chief object of the Crown, the Chancellor of the Court of Exchequer, as superintendant of the public revenue, is the officer generally considered as prime minister. The distribution of fifty millions a-year, joined with the royal support, has recently carried his power to the highest elevation. Next to him in authority are the secretaries of state, who are followed by the chancellor, the treasurer of the navy, the president of the council, the paymaster of the forces, the commissioners of the treasury, and other persons of high trust.

Judicature.] The judicature of England is worthy of the highest applause, with regard to precision and purity. It is, indeed, to be regretted that the vast number and confusion of the statutes, render the study of the laws peculiarly difficult, and the number of officers and retainers on the courts of justice, swells the expences of a suit to an enormous sum. But hardly can a country be named on the face of the globe, in which justice, civil or criminal, is administered with more integrity: bribes, so frequent in other countries, are totally unknown; and the saving of this expence must be candidly poised against other legal disbursements.

The Trial by Jury is another glorious feature of English jurisprudence, handed down from the Saxon times, and is justly regarded as the very safeguard of the lives, liberties, and properties of the nation. Its excellence has been respected by the Danish and Norman conquerors; and, it is hoped, will be venerated by the latest posterity.

Laws.] The laws of England in general, form a noble code of justice and equity, the precious legacy of remote ancestors. The stream issued pure and salutary from the

[4] Chamberl. 83, and Blackstone, b. i. c. v.

Saxon

Saxon rock; and neither foreign sources, nor ravaging floods, have been able to contaminate its beneficial qualities. English jurisprudence regards the civil code as a relic of despotism; and rarely listens to the papal voice of the canon law. It would be idle and extraneous here to attempt, even a brief sketch of the laws of England. The most singular usages are what was termed *Borough English*, by which the youngest son, or in defect of issue, the youngest brother was to enjoy the heritage; as it was to be presumed that his elder brethren had learned their father's business [5]. That of *Gavel-kind* is scarcely known, except in Kent, and has three branches; the heirs male share all the land alike; each heir may sell or alienate at the age of fifteen; and though the father be attainted of treason, the inheritance passes to the progeny [6]. In no country are wills so much venerated by law: that of Mr. Thelusson furnishes a recent example.

JURY.] All trials, upon common and statute law, are determined by a jury of twelve, chosen as unobjectionable, from a larger number summoned by the sheriff. They have their station in the court, near the judges; and when the examination of the witnesses, and the pleadings are ended, a judge recapitulates the whole evidence and arguments, and states the law: after which the jury retire, for a shorter or longer space, as doubts may arise. Upon their return, their foreman declares the verdict, which must be unanimous. The necessity of unanimity, has occasioned many difficulties; and it seems preferable to decide by a certain majority, as is done in Scotland in criminal cases. The forest and by-laws may here be omitted; but a more vigorous branch of English judicature must not be forgotten. Martial law, or the *Lex Castrensis Anglicana*, may be clearly traced to the reign of Henry V. who issued a code of military statutes, published by Upton and Grose. The statutes chiefly relate to sacrilege, prisoners, robbery of merchants, &c. &c. and refer solely to the actual exercise of war: the pain of death rarely occurs, except in the case of any person who cries *havoc*, an expression seemingly equivalent to "no quarter." Martial law may be proclaimed by the King, regent, or lieutenant-general of the kingdom; and even in time of peace, though the prerogative be rarely employed, except during war. It is in fact a dictatorial power, never exerted except on great emergencies. The trials are summary and severe, as the necessity of the case authorises.

COURTS OF JUSTICE.] In a short view of our courts of law, the next in dignity to the House of Lords is the Court of King's Bench, so called because the Sovereign was understood to judge in person, and its jurisdiction of course extends to the whole kingdom. The presiding judge is denominated Lord Chief Justice of England. Here are chiefly determined what are called pleas of the crown; and appeals lie from several other courts. The Court of Chancery judges causes in equity, to moderate the rigour of the law, and defend the helpless from oppression, and especially to extend relief in three cases, fraud, accident, and breach of trust. The chancellor himself is the supreme judge. The master of the rolls, or keeper of the important papers enrolled in chancery, is an officer of great dignity, and considerable patronage. The office of the rolls contains the charters, &c. granted by Richard III. and his successors; those of more remote antiquity being lodged in the Tower. The Court of Common Pleas judges, as the name imports, of the common suits between subject and subject; and tries all civil causes, real, personal, or mingled, according to the precise precepts of the law. The Court of Exchequer, so termed from the ancient mode of accounting upon a chequered board, decides all causes relating to the royal treasury or revenue. The lord treasurer, and the chancellor of the exchequer, may be regarded as honorary presidents, while the first actual judge is the lord chief baron. Three other judges, and many officers, belong to this high court. There is also a court for the Duchy of Lancaster, having recognizance of the revenues of that duchy, annexed to the crown by Henry IV. [7]

[5] Chamberl. v. i. 188. [6] Ibid. 17. [7] Blackstone, b. iii. c. 4.

CIRCUITS.] For the more commodious and general distribution of justice, the kingdom is divided into six circuits, which are visited by the judges in spring and autumn, when they sit and determine all causes of importance, civil and criminal; a method much to be preferred to the sedentary parliaments of France, in which the judges were biassed by local attachments. In the meanwhile more minute cases are determined by the justices of the peace, who may be traced to the fourth year of Edward III. Their office is chiefly to commit criminals to prison, and to inspect the execution of some particular laws relating to the poor, high-ways, and the like. They have a commission under the great seal, and the most respectable are styled justices of the quorum, from the words in the commission *Quorum* A. B. *unum esse volumus*. The *custos rotulorum*, or keeper of the rolls, produces them at the quarter sessions, where the justices meet once in three months: the grand inquest, or jury of the county, is here summoned, which enquires concerning crimes, and orders the guilty to jail till the next circuit or assizes.

SHERIFFS.] The office of sheriff, or præfect of the county, is to execute the royal mandates, to impannel juries, to bring persons to trial, and to see the sentences executed, to collect fines, and remit them to the exchequer, and to preserve the tranquillity of the shire. On the circuits he meets and attends the judges, with a gallant train of officers and servants. The sheriffs are annually pricked with a golden needle, by the King out of a list of six gentlemen of the county, drawn up by the itinerant judges.

Anciently there was a bailiff in every hundred, but the office is now rare, or fallen into disuse. The constables personally assist in the preservation of the peace, and execute the warrants of the justices. The coroner was originally a man of high rank, who shared the power of the sheriffs, particularly in what regarded the pleas of the crown; at present his duty is to enquire, by a jury of neighbours, into cases of violent death. The clerk of the market superintends the weights and measures, and it were to be wished, for the benefit of the poor, that the office were multiplied, and strictly enforced.

Such are the chief magistrates in the country. Cities and towns are generally ruled by a mayor and aldermen, or by similar officers, under different appellations, whose juridical power little exceeds that of the justices of peace. If a town send members to parliament, it is denominated a borough. The villages are chiefly under the authority of the lord of the manor, who holds courts, and retains many relics of feudal jurisdiction: and in the words of a well-informed writer, "Every little village hath almost "an epitome of monarchical government; of civil and ecclesiastical polity within itself; "which, if duly retained, would render us a very happy people[s]."

To enumerate the various punishments inflicted by the laws of England, would be an unnecessary task. It has been justly observed that they are too sanguinary, and that their frequency diminishes the intended purpose of impressing terror. If death were only inflicted in cases of murder, the relaxation would be found beneficial to the community. As man is an animal reared with considerable difficulty, and may generally be rendered useful, it would certainly be preferable to send criminals for life to the new and distant Asiatic settlements, than by the waste of blood to lessen strength and population.

[s] Chamberl. 129.

POPULATION.]

POPULATION.] The population of England has been recently ascertained by order of parliament, and the amount of each parish printed in a large volume. The result is as follows:

	Houses.			Persons.		Occupations.			
	Inhabited.	By how many Families.	Uninhabited.	Males.	Females.	Persons in Agriculture.	In Trade and Manufactures.	Other Persons.	Total of Persons.
England,	1,467,870	1,778,420	53,965	3,987,935	4,343,499	1,524,227	1,789,531	4,606,530	8,331,434
Wales,	108,053	118,303	3,511	257,178	284,368	189,062	53,822	266,573	541,546
Arm. Nav. Convicts on brd. Hulks.				469,188					469,188
				1,410					1,410
	1,575,923	1,896,723	57,476	4,715,711	4,627,867	1,713,289	1,843,353	4,873,103	9,343,578

The first abstract (printed July 1801) presents the following statement:

Regular forces, fencibles, and militia, on March 10th, 1801, -	186,733
Artillery, and engineer forces, - ditto - - - -	11,618
Seamen and marines in the Royal Navy ditto - - - -	106,128
Marines at head-quarters, - - ditto - - - -	20,151
Seamen employed under the Board of Customs, ditto - - -	897
Seamen employed in registered trading vessels ditto - - -	143,661
	469,188

Sufficient materials do not yet arise for exact enumeration of the various classes of inhabitants, a most important barometer of the political state*.

To

* Towards the beginning of the last century, Gregory King, an able political calculator, drew up the following table of the ranks of persons in England. It must be premised, that he has followed an exceptionable mode, in including the domestics in the families of each rank, whereas male and female servants ought to have formed a class apart.

Ranks.	Number of Families.	Heads in each.	Number of Persons.
Spiritual Lords - - - -	26	- 20 -	520
Temporal Lords - - - -	160	- 40 -	6,400
Knights - - - -	600	- 13 -	7,800
Baronets - - - -	800	- 16 -	12,800
Eminent clergymen - - -	2,000	- 6 -	12,000
Eminent merchants - - -	2,000	- 8 -	16,000
Esquires - - - -	3 000	- 10 -	30,000
Gentlemen - - - -	12,000	- 8 -	96,000
Military officers - - - -	4,000	- 4 -	16,000
Naval officers - - - -	5,000	- 4 -	20,000
Persons in lesser offices - - -	5,000	- 6 -	30,000
Persons in higher offices - - -	5,000	- 8 -	40,000
Lesser clergymen - - -	8,000	- 5 -	40,000
Lesser merchants - - -	8,000	- 6 -	48,000
Persons in the law - - -	10,000	- 7 -	70,000
Persons of the liberal arts - -	15,000	- 5 -	75,000
Freeholders of the better sort - -	40,000	- 7 -	280,000
Shopkeepers and tradesmen - -	50,000	- 4½ -	225,000
Artizans - - - -	60,000	- 4 -	240,000
Freeholders of the lesser sort - -	120,000	- 5½ -	660,000
Farmers - - - - -	150,000	- 5 -	750,000
Gipsies, thieves, beggars, &c. - -	—	- — -	30,000
Common soldiers - - -	35,000	- 2 -	70,000
Common sailors - - - -	50,000	- 3½ -	150,000
Labourers and out servants - -	564,000	- 3 -	1,274,000
Cottagers and paupers - - -	400,000	- 3 -	1,300,000
			5,499,520

It

COLONIES.] To the enumeration of the inhabitants of England, may be added many exterior colonies and settlements, the most important of which are now in Asia; but as the climate of Hindostan is rather adverse to European constitutions, it may be doubted whether our settlements there, though containing a considerable population, can be considered as permanent colonies. The natives subject to Great Britain cannot be now calculated at less than twenty millions, in itself an empire. The acquisition of the Dutch settlements, the colony of New Holland, and more minute stations must also be taken into the account. In America, and what is called the West Indies; Canada, Nova Scotia, Newfoundland, and the more northern settlements, with Jamaica, and the other Islands, may perhaps contain a million. In Africa, the Settlements, at the Cape of Good Hope, the Island of St. Helena, and at Sierra Leone, present an insignificant number, and Gibraltar is rather to be regarded as a military station. If we compute the North American States, detached from the mother country, at a population of five millions, England at nine, Scotland at two, Ireland three, and our colonies and settlements at two millions, we shall find in the various regions of the globe an increasing population of twenty-one or twenty-two millions, diffusing the English language and manners to a vast extent.

ARMY.] The army of England has latterly engrossed a considerable share of the population. It is estimated in regulars at 41 regiments of cavalry, and 144 of infantry, while the fencibles form 45 regiments, and the militia 86, exclusive of artillery and engineers[1]. The *effective* rank and file, including invalids, militia, and foreign corps, as well as the regular and fencible troops, was returned to the Secretary of War, in December, 1800, as amounting to 168,082. The volunteer corps in Great Britain and Ireland, may probably amount to 60,000 effective men[2].

NAVY.] But the great rampart, and supreme glory of Great Britain, consist in her navy; in size, strength, and number of ships, far exceeding any examples on record. If abundance of documents did not exist, the following genuine list would scarcely be credited by posterity.

It is now supposed that near 1,600,000 persons are employed in manufactures, and Mr. Young (Northern Tour, vol. iv. p. 364) computes that 2,800,000 are occupied in farming. The number of domestics allowed by King, might be in part computed, by reducing the superior families to four. The number of paupers and beggars, who, in fact, detract from the national strength, can now scarcely be supposed less than a million. The sailors and soldiers amount to about 400,000. The shopkeepers are perhaps triple. With these additions, &c. it would be easy to swell the list to our present supposed population of eight millions. The Reader may also consult Mr. Grellier's table of the productive and unproductive classes, in the Monthly Magazine, vol. x. p. 27; but as he estimates the population of England at only five millions and a half, his assumptions cannot be entirely credited, while some late writers, on the contrary, increase the population of England alone to eleven millions!

[1] Army List, Jan. 1801.

[2] So the daily papers, yet by the same authority, the Secretary at War, on the 16th Feb. 1801, computed the regulars at 193,187; militia, 78,040; fencibles, 31,415; in all, 302,642. The expence near thirteen millions! This computation, though including Ireland, seems exaggerated.

Navy List. Jan. 1801.

Statement of the Distribution of the British Naval Force, exclusive of the hired armed Vessels, which are chiefly employed in protecting the Coasting Trade of Great Britain.

	Line.	Fifties.	Frigates.	Ships, &c	Total.
In Port and fitting	27	7	46	98	178
Guard ships	4	0	1	0	5
In the English and Irish Channels	33	1	26	45	105
In the Downs and North Seas	9	1	17	36	63
At the West India Islands, and on the passage	1	0	21	24	46
At Jamaica	5	1	22	12	40
In America, and at Newfoundland	2	0	4	5	11
Cape of Good Hope, East Indies, and on the passage	10	8	20	19	57
Coast of Africa	0	0	1	3	4
Coast of Portugal, Gibraltar, and Mediterranean	16	2	53	28	99
Hospital and Prison ships	16	1	1	0	18
Total in Commission	123	21	212	270	626
Receiving ships	9	1	7	0	17
Serviceable, and repairing for service	2	0	1	0	3
In ordinary	44	3	23	44	114
Building	17	2	8	0	27
Total	195	27	251	314	787

To this may be subjoined the list of captures from the several hostile powers, from the commencement of the war, to January, 1801, after premising that many of them were already included in the above state of the navy:

	Line.	Fifties.	Frigates.	Ships, &c.	Total.
French	54	2	137	145	338
Spanish	8	0	14	31	53
Dutch	17	8	32	32	89
	79	10	183	208	480
Privateers of all Nations					832
			Grand Total		1312

For this immense fleet, the number of seamen annually voted, amounts from a hundred to a hundred and twenty thousand; a number almost incredible, and which no other country, ancient or modern, could have supplied. In China, indeed, half of the inhabitants may be said to live on the water, but in skill, spirit, and enterprize, are far inferior to British seamen*.

* In November, 1801, the Minister adduced to the House of Commons the following comparative statement:

	NAVY OF GREAT BRITAIN.			
In 1793,	Ships of the line	135	In 1801,	202
	Frigates and smaller vessels	133		227
		268		429
	NAVY OF FRANCE.			
In 1793,	Ships of the line	80	In 1801,	39
	Frigates	64		35
		144		74

The number of ships of the line in actual service is supposed never to have exceeded one hundred and twenty.

Present

Present disposition of the British Naval Force. May 1810.

Stations.	Line.	50—44.	Frigates.	Sloops and Yachts.	Bombs, Fire Ships	Brigs.	Cutters.	Sch. G. V. Lug. &c.	Total.
Downs	17	0	0	11	0	14	4	4	50
North Sea and Baltic	10	1	6	11	0	20	5	9	62
English Channel and Coast of France	9	2	12	9	0	16	7	8	64
Irish Station	0	0	9	6	0	1	1	11	28
Jersey, Guernsey, &c.	0	0	3	1	0	7	2	3	16
Spain, Portugal, and Gibraltar	19	3	13	7	3	9	1	2	58
Mediterranean, and on Passage	22	0	23	14	2	16	0	2	79
Coast of Africa	0	0	1	1	0	1	0	0	3
Halifax, Newfoundland, &c.	1	1	9	9	1	6	0	11	38
West Indies { Leeward Islands	3	1	11	14	0	22	3	13	67
West Indies { Jamaica, and on Passage	3	0	9	14	0	15	0	5	46
South America	1	1	4	2	0	6	0	1	15
Cape of Good Hope, and Southward	2	3	4	5	0	0	0	1	15
East Indies, and on Passage	4	2	20	5	0	6	1	0	38
Total at Sea	91	14	124	109	6	139	24	70	576
In Port and fitting	23	4	38	35	5	56	7	25	193
Guard Ships	4	2	4	5	1	0	1	1	18
Hospital Ships, Prison Ships, &c.	33	5	5	2	0	0	0	1	46
Total in Commission	151	25	169	151	12	195	32	97	833
Ordinary and repairing for Service	63	14	70	34	4	24	1	6	216
Building	42	0	18	4	0	0	0	0	64
Total	256	39	257	189	16	219	33	103	1113

NAVAL POWER.] The naval power of Great Britain, constitutes so striking and important a feature in the national portrait, that it merits particular illustration. Even in the Saxon times we find considerable fleets mentioned of the small vessels then in use. One of the Northumbriam monarchs assembled a numerous fleet near Jarro, the monastery of Beda, in an extensive haven of the time, now become a salt marsh. About the year 882, we find that Alfred directed a powerful fleet against the Danish invaders[8]; but it is to be regretted that the early writers have not been more particular with regard to the number and form of the vessels. The fleet of Edgar is also celebrated; but the author of the Saxon Chronicle assures us, that the armament of Ethelred II. in the year 1009, exceeded any which England had ever before beheld; and as William of Malmesbury computes that of Edgar at four hundred vessels, this may probably have amounted to five hundred of the small ships then known. But the devastations of the Danes and Normans occasioned such a decline in the naval power of England, that Richard I. was obliged to have recourse to foreign vessels for his crusade. In the reign of John, we, for the first time, find commemorated a signal victory of the English and Flemings, over the French fleet of Philip Augustus, which was computed at seventeen hundred ships, or rather boats[9]. The English monarch John, insolent in prosperity, mean in adversity, in the pride of his triumph, was the first who ordered the SALUTE to be paid by foreign vessels to the national flag. The fleet of England thenceforth continued to be always respectable, and generally victo-

[8] See Asser. Vita Alf. St. Croix, Hist. de la Puisance Navale de l'Angleterre, Paris 1786, 2 vols. 8vo.

[9] Near Dam, in Flanders, A. D. 1213. Damme, now inland, a league N. E. of Bruges, was formerly a maritime town, and the sea washed its walls. Guicc. Descript. Belg.

rious.

rious. In the reign of Edward III. it had acquired such pre-eminence, that in his gold coin, the first struck in England, he appears in a ship, the symbol of commerce and maritime power; but the preponderance of the English armaments, over those of France, only became permanent and decisive, a little more than a century ago, after the battle of La Hogue. Spain had yielded the contest since the destruction of her great armada; and Holland had been greatly reduced in the naval conflicts under Charles II. so that no other rival remained, and Great Britain maintains a fixed superiority over the ocean[10]. In the mechanism of ships, the French builders certainly excel; but, in the soul of ships, spirited, alert, and skilful seamen, no country can pretend to vie with Great Britain. The progress in number of vessels has been more rapid in this reign, than at any former period, as may appear from the comparative statement in the note, which includes every military vessel, from the first-rate to the frigate[11].

The special superintendance of the navy, is committed to the board of Admiralty, composed of admirals of known skill, and of peers, whose impartiality generally regards merit alone in this important service. The recent conduct of maritime war, has been crowned with distinguished success; and whilst the admirals must be allowed to rival any names in naval history, ancient or modern, the fame of Nelson has been consecrated by his glorious death.

Before the revolution, the impressing of men was legal, even for the land service; and in more early times, many forms of requisition were usual, workmen were impressed to build royal castles, artists for their decoration, and even singing boys for the chapel. Amidst a wide diffusion of liberty, and that individual security which is the most homefelt blessing of our constitution, it has been found impossible to abandon the impressing of seamen. The army naturally supports itself; for war, by producing a stagnation of manufactures, raises a supply of soldiers; but the seamen must be trained and inured to their peculiar element and profession; and the service being absolutely indispensable, it becomes a measure of political necessity to enforce it, if not offered voluntarily. This unavoidable additional hardship upon a class of men, subject to so many toils and deprivations, is deeply to be regretted; and every endeavour should in justice be exerted, to render their situation as comfortable as possible, and to impart to them a share of the national opulence, which their vigour so zealously protects.

Revenue.] In ancient times, the royal revenue chiefly arose from the domains or lands appropriated to the crown; from amerciaments civil and criminal, which passed to the fisc, or treasury; and from customs on goods imported and exported. As in war each soldier was obliged to maintain himself for a certain time, the expenditure was not much increased. Upon extraordinary emergencies, it appears that a contribution was raised by the consent of the national council. In later periods, subsidies were granted to the amount of a fifteenth, or a tenth, on the landed income, and a

[10] The friends of the gallant Rodney, and of Mr Clerk of Eldon, dispute the invention of breaking the enemy's line. Without any injury to their respective merits, it will be found on reading the Gazette, or the common Naval Historian, or Lives of the Admirals, that this decisive manœuvre was first practised by the great Earl of Sandwich in 1665, during a battle with the Dutch fleet.

[11]

Under James II.	- - -	173
William III.	- - -	273
Anne - - -	-	284
George I. in 1721	- -	206
George II. in 1734	- -	208
1746	- -	276
1755	- -	241
George III. 1762	- -	343
1801	- -	787

pro-

proportionable rate on moveable goods. As society advanced, taxes began to be imposed on the materials themselves, and from a small plant an enormous tree has arisen, with a labyrinth of roots, which, in the opinion of some politicians, undermine the island, while others believe that they only produce a more firm consolidation.

The excise forms one of the most productive branches of the revenue, amounting to between seven and eight millions. Next stand the customs, which produce about half that sum. The stamps and incidental taxes, as they are termed, arise to near three millions. The land tax has been recently rendered perpetual, and sold to the proprietors of estates, and other individuals, a measure which has had a favourable effect in raising the price of stocks. But instead of the land tax, now appear those on sugar, tobacco, and malt, amounting to 2,750,000*l.*; other supplies arise from the East India Company, lotteries, &c. In addition to all these, the income tax is supposed to yield 7,500,000*l.*, and if rendered perpetual, might swell the permanent revenue to 25 or 26,000,000*l.* But in the year 1799, it was supposed that the additional sums raised by loans, &c. swelled the national expenditure to near 60,000,000*l.* sterling.*

Of the permanent taxes, the greater part is employed in discharging the interest of the national debt, which, after the American war, amounted to more than 239,000,000*l.* while the interest exceeded 9,000,000*l.*† At present the national debt is about 480,000,000*l.*, and the interest about 19,000,000*l.* To alleviate this growing burthen, a sinking fund was instituted in 1786, by which between 20 and 30,000,000*l.* may be considered as already redeemed.

The national debt began in the reign of William, and grew into what have been called the funds, or stocks, only synonymous terms for the public debt‡.

The taxes have not only increased the expense of every article of life, but have of course so enormously swelled the disbursements of war, that perhaps in a short time it may become too dear a game, even for princes. During peace the national expenses are greatly reduced. The civil list, from which are defrayed the salaries of officers of state, judges, ambassadors, &c. together with the expences of the royal family, amounts to about 1,000,000*l.* annually.

The following interesting Article appeared in the daily Papers:

Statistical Account of Great Britain, 1809.

The number of houses inhabited, by how many families, and those uninhabited, are thus calculated:

	Houses Inhabited.	No. of Families.	Uninhabited.
England - -	1,472,870	1,787,520	53,965
Wales - -	108,053	118,303	3,511
Scotland - -	294,553	364,079	9,537
Total -	1,875,476	2,269,902	67,013

* For 1801, the minister computed it at 42,268,000*l.*; but the real amount was not capable of being foreseen.

† In 1790, the national debt was 247,981,927*l.*; the interest and charges of management, 9,469,117*l.*

‡ See Mortimer on the stocks, where the reader will find a curious account of stock-jobbing, or buying against time, a species of gambling. In public loans, ib. 172, the engager commonly gains 10 per cent., while the laws against usury are only put in force in private transactions. Hence new loans are greedily filled.

The whole National Income has been estimated at 132,470,000*l.* according to the following Table:

From Rent and Lands, - - -	£29,000,000
From Rent of Houses, - - -	8,500,000
Profits of Farming, or Occupation of Land, -	6,120,000
Income of Labourers in Agriculture, - -	15,000,000
Profits of Mines, Canals, Collieries, &c., - -	2,000,000
Profits of Merchant Shipping, and Small Craft, -	1,000,000
Income of Stock-holders, - - -	20,500,000
From Mortgages and other Monies lent, - -	3,000,000
Profits of Foreign Trade, - - -	11,250,000
Profits of Manufacturers, - - -	14,100,000
Pay of Army, Navy, and Merchant Seamen, - -	5,000,000
Income of the Clergy of all descriptions, - -	2,200,000
Judges, and all subordinate Officers of the Law, -	1,800,000
Professors, Schoolmasters, Tutors, &c., - -	600,000
Retail Trades not immediately connected with Foreign Trade or Manufactures, - - -	8,000,000
Various other Professions and Employments, - -	2,000,000
Male and Female Servants, - - -	2,400,000
	132,470,000

From this Table may be formed a calculation of the amount of the National Capital:—

Value of Land at 28 years' purchase, - -	£312,000,000
Value of Houses at 20 years' purchase, - -	170,000,000
Manufactories, Machinery, Steam Engines, &c. -	20,000,000
Household Furniture, - - -	42,500,000
Apparel, Provisions, Fuel, Wine, Plate, Watches and Jewels, Books, Carriages, and other Articles, - -	40,000,000
Cattle of all kinds, - - -	90,000,000
Grain of all kinds, - - - -	10,600,000
Hay, Straw, &c. - - - -	6,600,000
Implements of Husbandry - - -	2,000,000
Merchant Shipping - - - -	12,800,000
The Navy - - - - -	6,000,000
Coin and Bullion - - - -	24,000,000
Goods in the hands of Merchants, &c. - -	16,300,000
Goods in the hands of Manufacturers, and Retail Traders,	20,000,000
	772,800,000

Mr. Pitt, in the year 1795, estimated the total landed property at 750,000,000*l.*, and the personal property at 600,000,000*l.*, making a total of 1,350,000,000*l.*

The difference in the proportion of inhabitants to a house, between some towns and others, is from $9\frac{3}{4}$, which occurs at Plymouth, to about $5\frac{3}{4}$ or 5, which occurs at Gloucester and Hereford, $4\frac{1}{2}$ at Worcester.

The late enumeration has ascertained also the proportion of males and females. It has long been known that more male children are born than female. The registers of baptisms for 29 years make 3,285,188 of the former, and 3,150,922 of the latter, which is about the proportion of 104 to 100.

Property Tax.

Return to an Order of the Honourable House of Commons, dated the 8th day of June 1809, for an Account or Estimate of the Nett Assessment of the Property Tax, for the years ending 5th April 1807, 1808, and 1809 respectively:

Anno ending 5th April 1807, - - - -	£11,299,936
Anno ending 5th April 1808, - - - -	11,345,350
Anno ending 5th April 1809, - - - -	11,359,229

For the year ending 5th April 1807, the above account is made out from actual returns, except from the department of the War Office.

For the year ending 5th April, 1808, returns from 218 surveyors' districts have been received; from which it appears that the assessments on trade and professions have decreased: so that on the whole a diminution of duty may be computed, to the extent of 72,000*l.* nearly in the assessments by commissioners for general purposes, but which is overbalanced by the deductions of duty in other departments.

For the year ending 5th April, 1809, returns from 25 surveyors' districts have been received; the result from which is more favourable than in the year preceding, at the rate of 4$\frac{1}{6}$th per cent. increase, and will therefore warrant an estimate to the amount of that year. The remainder of that year, except in the article of duty on dividends, is likewise computed on the amount of the preceding year, from the same sources for want of returns.

Office for Taxes, June 13, 1809.

Political Importance and Relations, 1800.] With such a prodigious command of national treasure, the political importance and relations of Great Britain, may be said to be diffused over the world, for wherever money influences man, there may her power be perceived. The union of Scotland with England, delivered the latter country from the perpetual check, exercised by politicians, ancient and modern, that of exciting an enemy from behind, and thereby dividing the power of an antagonist. That with Ireland, if preserved by wise and lenient measures, must also impart additional energy. The most important political considerations, are those between Great Britain and France. It seems hardly reconcileable to humanity, or to any idea of divine benevolence, to style any country the natural enemy of another: but human affairs, alas! are seldom conducted with pure benevolence and humanity, and cannot possibly be, till all nations become benevolent and humane. If France must not be styled the natural enemy of Great Britain, she has, for many centuries, been a constant and jealous rival; eagerly embracing every opportunity to lessen British prosperity and power; an impulse which will probably continue till all men shall become philosophers; or, in other words, shall be ruled by the maxims of universal reason; a perfection too visionary to be expected, as man, in all ages and climates, and under whatever forms of government, has ever been found to be chiefly influenced by his habits and passions. Such being the case, it has ever been regarded as the political interest of England, to balance and divide the enmity of France, by a strict alliance with some limitaneous state. In this point of view even Savoy has been found useful, though its power be only adequate to a slight diversion. Nor are the German states bordering on France, Swabia, and the two Circles of the Rhine, nor even Switzerland itself, capable of much exertion. Hence it might seem that sound policy would dictate as complete a consolidation of German power, as could be effected, in order to give a decided and vigorous check to that of France from behind. The possession of the Netherlands by the powerful House of Austria, was certainly of great moment to the safety of Great Britain, especially since Spain and Holland have

have fallen into decline. The latter country presents, however, a connection of superlative importance to England, being her grand mart of trade with the Continent. Russia, a most powerful monarchy, though once drawn into the vortex of the present grand commotion, is too remote to afford lasting assistance; but her amity is valuable in a commercial view, and as she might, by no great stretch of oriental power, detach an army into Hindostan, and overturn our opulent possessions. An alliance with Prussia has ever been regarded as desirable, though not of such consequence against France as that with Austria. The connection with Portugal has been enforced by mutual advantages of commercial intercourse*; and by the family compact between France and Spain. As to Denmark and Sweden, their friendship or enmity is little momentous; but as Sweden has long maintained a strict connection with France, it is most natural that Britain should balance it, by cultivating that of Denmark.

Such seem to have been the leading ideas of political writers, concerning the chief relations to be maintained by the British empire.

* Firmly established by the Methven treaty, 1703. These considerations were written before the late connections of Russia, Sweden, Denmark, and Prussia, with France.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—The Arts.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE singularity of manners in England, has often excited the surprise of foreigners, and the attention of our own ethic writers, who have attempted to deduce the sources from moral and physical causes; estimating as the first, the freedom diffused over the country, which permits the indulgence of individual inclination; and recurring for the latter, to the perpetual variations of the climate, producing effects of electric sympathy on the animal spirits.

The consideration of national manners may be conveniently referred to four divisions: 1. Birth, marriage, death; 2. Diet; 3. Houses and dress; 4. Amusements.

The ceremonies of baptism, marriage, and burial, admitting of few variations in most Christian countries, it becomes unnecessary to consider that division. The English are generally esteemed to exceed in the use of animal food; but, after the recent importations of French emigrants of all classes, this position begins to be doubted. If stomachic diseases be really more frequent than in other countries, they may more justly be ascribed to our potations of heavy malt liquor, which deservedly strike foreigners as a singularity in English diet. Even our lightest liquors of that sort have not escaped their remark; for a late French traveller has observed, that the English commonly drink at their meals a sort of medical ptisan, which they call *small beer*. Our ancestors prided themselves in the variety and richness of their ales, and old writers enumerate many sorts, as Cock, Stepney, Stichback, Hull, Derby, Northdown, Nottingham, Sandbach, Betony, Scurvy-grass, Sage-ale, College-ale, China-ale, Butler's-ale, &c.[1], nor even at present do we refuse praise to the various qualities of our Burton, Dorchester, Taunton, Windsor, Scottish, Welsh, and other ales. But the most peculiar malt beverage is porter, which ought to be solely composed of brown or high dried malt, hops, liquorice, and sugar, but is sometimes debased by other ingredients: that of London is particularly famous, and is an article of exportation, being esteemed a luxury on the banks of the Delaware and the Ganges. Punch was another national liquor, composed of spirits, water, acids, and sugar, but its use is now in the decline, though the late Dr. Cullen esteemed it a salutary potation, in a moist and variable climate. The prodigious consumption of tea is another peculiar feature, the use of that plant being rare in other European countries; to phlegmatic constitutions it may be beneficial, but among the common classes, its enervating powers are often attempted to be corrected by the use of spirituous liquors. The latter bane has been long known in Russia, and other northern kingdoms, but in the milder climes of Great Britain and Ireland, is destructive of the health and morals of the people. The legislature has been often forced to interpose to prevent the

[1] Chamberl. 191.

growth

growth of drunkenness, wretchedness, and vice; and it is to be wished, that a late committee of the house of commons had sanctioned a motion that was made to restrict spirituous liquors to their ancient boundaries, the shops of the chemists. It was objected, that by private distillation and smuggling, the evil would continue, without yielding any revenue; but the prohibition must have made a deep and salutary impression, and the contagion must have been restricted to far narrower bounds. In all events, it is the moral duty of the legislature to increase the price of spirits almost to prohibition, and to withdraw taxation from malt liquor, which ought to remain a stout and cordial beverage for the poor.

The simplicity of the English cookery strikes foreigners as much as that of the dress, which, even among the great, is very plain, except on the days of court gala. A Frenchman drinks his wine during dinner, but the late Mr. Gibbon has remarked[2], that the luxury of a daily table in England, permits a gentleman to taste half a dozen sorts of wine during dinner, and to drink his bottle of claret afterwards. The red wine of Portugal is, however, a greater favourite than that of France, as its astringent and antiseptic qualities, are found highly salutary in a moist climate. A late French traveller[3] has remarked, that the English know not the proper use of coffee; but will swallow several cups of a brown water, instead of one cup of the real strong coffee, drank in other countries.

The houses in England are peculiarly commodious, neat, and cleanly; and domestic architecture seems here arrived at its greatest perfection. The dress, as has been before observed, is rather plain and neat, than splendid, a praise which also applies to that of the ladies, who have now abandoned the tight form so prejudicial to health, and who have assumed much of the Grecian ease and elegance.

The amusements of the theatre and of the field, and various games of skill or chance, are common to most nations. The baiting of bulls and bears is, it is believed, nearly discontinued; one of the most peculiar amusements of the common people, is the ringing of long peals, with many changes, which deafen those who are so unhappy as to live in the neighbourhood of the church.

Prior to the middle of the sixteenth century, the English and French were regarded as barbarous nations by the more polished Italians. The reign, and female blandishments of the court of Elizabeth, seem to have had a wonderful effect in civilizing the manners. The transition has been well pourtrayed by an ancient writer, whose simple language, given in modern orthography, may perhaps amuse the reader.

"There are old men yet dwelling in the village where I remain, who have noted "three things that are marvelously altered in England within their sound remem- "brance. One is the multitude of chimneys lately erected; whereas in their young "days there were not above two or three, if so many, in many uplandish towns of "the realm, (the religious houses, and manor places of their lords, always excepted, "and peradventure some great personages,) but each one made his fire against "a *rere dosse* in the hall, where he dined and dressed his meat. The second is the "great amendment of lodging; for, said they, our fathers, and we ourselves, have "lain full oft upon straw pallets, covered only with a sheet, under coverlets made of "*dagswain* or *hopharlots*, (I use their own terms,) and a good round log under their "heads, instead of a bolster. If it were so that our fathers, or the good man of the "house, had a mattrass or flock bed, and thereto a sack of chaff to rest his head "upon, he thought himself to be as well lodged as the lord of the town, so well were "they contented. Pillows, said they, were thought meet only for women in child- "bed. As for servants, if they had any sheet above them, it was well, for seldom

[2] Posth. Works. [3] Faujas, passim.

"had

" had they any under their bodies, to keep them from the pricking straws that ran " through the canvas, and raised their hardened hides.

" The third thing they tell of, is the exchange of wooden platters into pewter, " and wooden spoons into silver or tin. For so common were all sorts of wooden " vessels, in old time, that a man should hardly find four pieces of pewter, (of which " one was peradventure a salt-seller,) in a good farmer's house; and yet, for all this " frugality, if it may so be justly called, they were scarce able to live and pay their " rents at their days, without selling of a cow, or a horse, or more, although they " paid but four pounds at the uttermost, by the year. Such also was their poverty, " that if a farmer, or husbandman,. had been at the alehouse, (a thing greatly used in " those days,) amongst six or seven of his neighbours, and there, in a bravery, to " shew what store he had, did cast down his purse, and therein a noble, or six " shillings in silver, unto them, it is very likely that all the rest would not lay down " so much against it; whereas, in my time, although peradventure four pounds of " old rent be improved to forty or fifty pounds, yet will the farmer think his gains " very small, toward the midst of his term, if he have not six or seven years' rent " lying by him therewith to purchase a new lease; besides a fair garnish of pewter " on his cupboard, three or four feather-beds, as many coverlids, and carpets of " tapestry, a silver salt-sellar, a bowl for wine, if not a whole nest, and a dozen of " spoons to furnish up the suit. This also he taketh to be his own clear; for what " stock of money soever he gathereth in all his years, it is often seen that the landlord " will take such order with him for the same, when he reneweth his lease, (which is " commonly eight or ten years before it be expired, since it is now grown almost a " custom, that if he come not to his lord so long before, another shall step in for a " reversion, and so defeat him outright,) that it shall never trouble him more than the " hair of his beard, when the barber hath washed and shaven it from his chin[4]."

This remarkable change in the reign of Elizabeth, was carried, as usual, to the opposite extreme; and the same author loudly execrates the contemporary luxury of attire. " I have met," says he, " with some in London so disguised, that it hath " passed my skill to discern, whether they were men or women." He adds, " neither " was it ever merrier with England, than when an Englishman was known by his " own cloth; and contented himself with his fine *carsie* hose, and a mean slop " (trowsers); his coat, gown, and cloak, of brown, blue, or puce, with some pretty " furniture of velvet, or fur, and a doublet of sad-tawney or black velvet, or comely " silk; without such garnish colours as are worn in these days, and never brought in " but by the consent of the French, who think themselves the gayest men, when they " have most diversity and change of colours about them."

Under this division of geography have been generally arranged what are called national characters, but which, in fact, are commonly monuments of prejudice and injustice, and particularly noxious to the minds of youth. It shall, therefore, only be remarked, that the cold restraint which some foreigners have ascribed to the English, has been candidly judged by a recent voyager[5], to exist only in appearance. A more genuine attribute of the English is integrity, which has carried their credit and commerce to an extent before unknown in the history of nations.

LANGUAGES.] Most European languages are derived from the Gothic or the Latin. To the Latin origin belong Italian, French, and Spanish; to the Gothic, the German, Dutch, Flemish, Danish, Swedish, and Norwegian. From the situation of the country, and other causes, the English participates of both those grand sources; and unites in some degree the force of the Gothic with the melody of the Latin dialects. The ancient ground, and native expression, originate from the Gothic divisions of the Belgic,

[4] Description of Britain, in Holinshed's Chronicle, vol. i. fol. 85. [5] Faujas, tom. i. p. 61.

Saxon,

Saxon, and Danish; but particularly from the Belgic, as will appear from comparison with the Dutch and Frisic. The languages of Latin origin have, however, supplied a vast wealth of words, sometimes necessary, sometimes only adopted because they are more sonorous, though not so emphatic as the original Gothic. There is no evidence of the existence of Celtic words in our language, whatever some antiquaries have imagined, for the words they indicate may also be found in Iceland, a country never peopled by the Celts.

Numerous manuscripts exist, written in the old Anglo-Saxon, or old English language, and one of its most classic authors is the great Alfred himself. It appears from many works, written long after the conquest, that the French language, though colloquial among the great, scarcely imparted any tinge to the national tongue. The conquests of Edward III. in France, and other circumstances not proper to be here discussed, effected in the fourteenth century, a change in vain attempted by the Norman conqueror. Chaucer, who wrote at that period, presents almost the first rude dawn of what may be termed the English language. In the same century, that enterprising traveller, Sir John Mandeville, supplies one of the first specimens of English prose; as he was a man of some science for that time, has interspersed several words of Latin origin; and his book was much adapted to public curiosity, he may with some justice be regarded in the new light of a father of the English language. Gower, the poet, rather preceded Chaucer; and serves to evince, that Chaucer did not introduce any innovations, but, as may well be supposed, wrote in the language of his time.

In the succeeding century, the speech had made such rapid advances, that even as early as the reign of Henry VI. we fiind it vary very little from that of the reign of Henry VIII. There are papers preserved by Rymer, and others, written in the reign of Henry VI. and composed with a force and precision which may appear surprising. The works of Fortescue, in the following reign of Edward IV. are not only dictated by excellent sense, but, setting aside the orthography, might even be perused by the common reader.

In the reign of Elizabeth, a century after, the English language had acquired such copiousness, dignity, force, and melody, that, perhaps, in the eye of very distant posterity, moderns may be supposed never to have exceeded; what is gained in elegance, being generally lost in power. Sydney's defence of poesy may be regarded as a good specimen of English prose; not to mention Hooker's Ecclesiastical Polity, and other large works of that period, which continue to be read and admired. The common translation of the Bible, is a noble specimen of the dignified prose of the following reign; beyond which it is unnecessary to conduct this sketch, as our libraries abound with the succeeding publications.

The construction of the English language is peculiar, and renders the study of it very difficult to foreigners. The German, and other Gothic dialects, present declensions of nouns, and other correspondencies with the Latin; while in the English all such objects are accomplished by prefixes. Anomalies also abound, and are too deeply rooted, ever to be eradicated by grammatical rules. Further remarks would be foreign to the plan of this work, which however requires occasionally short specimens of the various languages of the globe, to enable the reader to judge of the relative origins of nations: for this purpose the Lord's Prayer is generally chosen, which shall here be given in Anglo-Saxon, and in modern English.

Uren fader thic arth in Heofnas. Sie gehalgud thin noma. To cymeth thin Ryc. Sie thin willa, sue is in Heofnas and in eortho. Uren hlaf oferwistlic sel us to daeg. And forgeve us scylda urna sue we forgefan scyldgum urum. And no inlead usig in custnung. Ah gefrig usich from ifle. Amen.

Our father which art in heaven, hallowed be thy name; thy kingdom come; thy will be done on earth as it is in heaven; give us this day our daily bread, and forgive us our debts as we forgive our debtors; and lead us not into temptation, but deliver us from evil. Amen.

LITERA-

LITERATURE.]. English literature is a vast and inviting theme, but a few fugitive remarks must here suffice. Of the traditionary verses of the Druids, no relic probably exists; and the Roman conquest does not appear to have inculcated letters with much diffusion, for while we have classical writers of almost every other European kingdom, subdued by that great nation, of France, Spain, and even of Africa; no author of those periods claims a British origin. The country was seized by the Saxons before British literature faintly dawned in Gildas, A.D. 560. Irish literature commences about the same period, and continued for some centuries, to supply numerous writers in the Latin language, while England remained almost destitute. But Beda, in the eighth century, redeemed this defect, in himself a host, and, like Chaucer, the wonder of his time. The Danish invasions were ruinous to literature, both in Great Britain and Ireland, and the great Alfred was obliged to exert his utmost endeavours, in order to restore some degree of learning, even among the clergy. That admirable prince did not aspire to Latin composition, but translated some works of merit and utility, as the histories of Orosius and Beda, into the Anglo-Saxon. Asserius is perhaps the only Latin writer, who can be named between the age of Bede and the year 1100, if we except a few lives of saints: but the Saxon Chronicle is a noble and neglected monument of this interval, which being the only civil History of England, for a space of 400 years, ought to be carefully collated with all the manuscripts, and published with all the splendor of typography. About the year 1100, English literature commences a firm and steady pace. A numerous train of historians, poets, and other writers, fills the pages of biography. In the fourteenth century, Roger Bacon aspires even to the praise of eminent genius. In the following century, the civil wars between the houses of York and Lancaster were destructive of literature and the arts; nor will it be easy to name an illustrious author of that period, but the introduction of printing in the reign of Edward IV. forms a memorable epoch. The writers of the sixteenth, and following centuries, are numerous and well known.

On a comparative view of European literature, it may be observed that the Italians, its first restorers, excel in poetry, history, and other departments of the Belles Lettres; but about the year 1600, their taste began to decline, and a mental effeminacy arose, which is conspicuous in the fantastic societies and academies, and in the extravagant flatteries which every writer thought due in politeness to another; the term *illustrious* becoming as familiar as that of *Signior* and *Madama*, a waste of literary fame, which rendered it of no value. The French even originally excelled in romance and light poetry, and that pleasing and minute species of biography, called memoirs; they have produced few works of original genius, but yield to no nation in scientific productions, and in literary disquisitions, written with good sense, precision, and accuracy. Spanish literature forms a vast treasure, little known to other nations; and scarcely any department can be named, in which excellent writers do not appear. The native German, Danish, and Swedish literature, is but of recent celebrity. To complete the sole intention of this parallel, the grand feature of English literature, is original genius, transmitted even from Roger Bacon, to our Shakespeares, Miltons, Newtons, and Lockes, not to dwell here on claims more minute, but equally firm. In the scientific departments, England must yield to France, except in the various branches of mathematical knowledge, the institution of the Royal Society, and the genius of Newton, having attracted the greatest talents within their sphere, to the neglect of other departments of curious investigation. The English clergy, who far exceed in learning any other body of that description in Europe, have always cultivated classical literature, with distinguished zeal and predilection.

An old writer observes, that during the civil war under Charles I. there were "more

"good, and more bad books, printed and published in the English tongue, than in all "the vulgar languages of Europe[6]." Perhaps Germany may now exceed our literary efforts; yet more novels are supposed to be published in England in one month, than in all the rest of Europe in a year. Our literary journals, in which we may also claim a great degree of excellence, may indicate to foreigners, the vast extent of modern English literature.

The present state of the arts in England, is worthy of so opulent and refined a country, and the progress has been rapid beyond example. The late Horace Walpole, Earl of Orford, has delineated from the papers of the industrious Vertue, a pleasing and animated picture of the history of the arts in this country. Some faint traces of painting occur in the thirteenth century; but the names and country of the artists do not appear, except that of William of Florence, where the art had faintly begun to revive. In the reign of Edward I. the magnificent castles built in Wales, attest the genius and skill of the architects, while their individual fame is lost in obscurity; and towards the end of the fourteenth century, rich monuments of architecture and sculpture, are interspersed with some few remains of painting. The Missals in particular, and other manuscripts, begin to be illuminated or adorned with miniature paintings of great lustre; and as the Gothic architecture is by some conceived to have originated from the shrines for relics, so the larger paintings seem mere amplifications of the manuscript miniatures. But while the neighbouring Flanders began to display many native names, England continued, till the last century, to import her chief painters from abroad, as Holbein, Antonio More, Zucchero, Jansen, Mytens, Rubens, Vandyke, Lely, Kneller, &c. &c. Yet in miniature and engraving, there were excellent native artists in the seventeenth century; and in the beginning of that century, an eminent native architect, Inigo Jones. In the beginning of the eighteenth century, even the noble architecture of St. Paul's, did not redeem the other arts from great decline, till Hogarth instituted examples of ethic and characteristic painting, which have deservedly excited the admiration of Europe. His fame as an artist has been eclipsed by his inventive genius, but his pictures of Marriage-á-la-Mode, and many others, are finished with a care, minuteness, and harmony, worthy of an eminent Dutch master. The present reign has not only been distinguished by patronage of the arts, but been fortunate in exuberance of artists of deserved reputation. To enumerate the living might be invidious, or occasion suspicions of partiality, but among the deceased may be named Sir Joshua Reynolds, eminent in history and portrait, and by his scientific disquisitions on the art; Gainsborough and Wilson in landscape, &c. &c. Though in the seventeenth century, Faithorne, and one or two others, shewed great skill and spirit in engraving on copper, yet our chief artists, even in the eighteenth century, were French, till the national fame was raised by Strange, Woollett, Worldige, and others, who have been succeeded by such a number of excellent artists in this department, that England excels every country, and the prints executed in London attract universal admiration and imitation. Architecture and Sculpture now also boast of many distinguished native names; but in music we still revere the superior skill of the Germans and Italians, though our masters far excel those of any other country, and France in particular, where, however, the horrible discords fashionable for 200 years, begin at length to yield to the German and Italian taste.

EDUCATION.] In a view of any country, education forms one of the most important topics, as its consequences extend to the essence and well-being of the community. The education of the lower classes in England, had become extremely neglected, before the benevolent institution of the Sunday schools. There can be no doubt that where the common people are the best instructed, there they will be found the most quiet, contented, and virtuous; as they feel a conscious self-respect, are accustomed to be treated

[6] Chamberl. 191.

with regard by each other, and will cheerfully extend the same reverential conduct towards their superiors in the favours of fortune. Political theories, being founded merely on analogical reasoning, and no two cases, climates, or countries, being precisely similar, they become very hazardous in experiment; but a practical estimate of the advantages of general education, may be formed by comparing the neglected peasantry of Ireland, with the peaceable Highlanders of Scotland, where public schools exist in every parish. The middle and higher ranks of English, spare no expence in the education of their sons, by private tutors at home, or at what are called day-schools and boarding schools. The former kind, in which the master only attends to mental culture, seems preferable to the latter, which requires additional cares of the child's health, diversions, and conduct. Our most eminent public schools, are those of St. Paul's, Westminster, Eton, and Winchester; and from them have arisen some of the most distinguished ornaments of their country. The scholars in due time proceed to the universities of Oxford and Cambridge, foundations of an extent and grandeur that impress veneration. The number and æra of the colleges will appear from the following list:—

University of Oxford.

1263.—2. BALIOL COLLEGE was founded by John Baliol, father to John Baliol, King of Scotland, and Dame Der Verguilla his wife, Countess of Salisbury.

1270.—3 MERTON COLLEGE was first erected at Malden near Kingston, Surrey, A. D. 1260, and ten years after removed to Oxford. The founder was William De Merton, Lord Chancellor to King Henry the Third.

1316.—4. EXETER COLLEGE was founded by Walter de Stapleton, Bishop of Exeter, and Lord High Treasurer to King Edward the Second. It first obtained the name of Stapleton Hall; but having been subsequently enlarged and further endowed by benefactions from the county of Devon, it was then denominated Exeter College.

1327—5. ORIEL COLLEGE is said by some to have been founded by King Edward the Second, in the year 1323; but, according to others, Adam Brown, or De Brome, Almoner to King Edward, formed and endowed the institution; but fearing he might be implicated by the manifestation it made of his immense wealth, he attributed the foundation to that monarch, after his death.

1340.—6. QUEEN'S COLLEGE was founded by Robert Egglesfield, domestic chaplain to Philippa, Queen to King Edward the Third.

1379.—7. NEW COLLEGE was founded by William de Wickham, Bishop of Winchester, who also established a College at Winchester, as a preparatory seminary to this.

1420.—8. LINCOLN COLLEGE was founded by Richard Flemming, Archbishop of York, who leaving the plan unfinished, it was about fifty-nine years after completed by Thomas Rotherham, Bishop of Lincoln.

1437.—9. ALL SOUL'S COLLEGE was founded by Henry Chicheley, Archbishop of Canterbury, and afterwards more amply endowed by Cardinal Pool.

1458.—10. MAGDALEN COLLEGE was founded by William Wainfleet, Bishop of Winchester.

1512.—11. BRAZEN-NOSE COLLEGE was founded by William Smith, Bishop of Lincoln, but completed by Richard Sutton, a Cheshire Gentleman.

1516—12. CORPUS CHRISTI COLLEGE was founded by Richard Fox, Bishop of Winchester, and enlarged by Hugh Oldham, Bishop of Exeter.

1524.—13. CHRIST CHURCH COLLEGE owes its origin to Cardinal Wolsey; but his disgrace at court having prevented the execution of his plan, it was finished by King Henry the Eighth, A. D. 1529, who then constituted the church to be the cathedral of the Diocese of Oxford; and as a nursery to the college erected Westminster School.

1518.—14. TRINITY COLLEGE. Thomas Hatfield, Bishop of Durham, instituted a seminary called Durham College, but he dying before his plan was completed, Sir Thomas Pope carried the founder's intention into full effect, and dedicated it to the Holy Trinity, A. D. 1550.

1437.—15. ST. JOHN'S COLLEGE was first founded by Archbishop Chicheley, and denominated Bernard's College; but having been suppressed in the reign of Henry the Eighth, it was re-founded and re-endowed as a college dedicated to St. John by Sir Thomas White, a wealthy merchant of London, A. D. 1557.

1571,—16. JESUS COLLEGE was originally instituted for Welch students, by Hugh Price, Esq. and part of the building erected at the expence of Enbule Thirlwall; but was greatly enlarged, more amply endowed, and incorporated as a College by Queen Elizabeth.

1613.—17. WADHAM COLLEGE was chiefly founded by the benefaction of Nicholas Wadham, Esq.

1624.—18. PEMBROKE COLLEGE chiefly by Thomas Tesdale, Esq.

19. WORCESTER COLLEGE, formerly Glocester Hall.

N. B. For an account of the two latter, see Wood's History of the University, edited by Gutch.

There are besides several halls, or smaller colleges, and some recent foundations. The laudable favour of the Oxonians, adores Alfred as the founder of what is called the University college, and even assigns the date of 886: but candid antiquaries assert, that the passage in one or two old Chronicles, alledged in support of this idea, is a manifest interpolation, not to be found in the best manuscripts: and though great schools of divinity may have previously existed at Oxford, such were also known at other places, which lay no claim to the title of university.

University of Cambridge.

1257.—1. ST. PETER'S COLLEGE, usually called PETER HOUSE, was founded by Hugh de Balsham, Bishop of Ely; its endowments have been enlarged by successive benefactors.

1344.—2. CLARE HALL was built on the scite of the University Hall, a small college founded in 1326, by Dr. Richard Baden, Chancellor of the University, which being consumed by fire, the present establishment was erected and endowed by Elizabeth de Burg, heiress to the last Earl of Clare.

1343.—3. PEMBROKE HALL was founded by Mary Countess of Pembroke, and endowed in pursuance of a charter from Edward the Third. Its establishments were greatly enlarged by grants from Henry the Sixth.

1356.—4. CORPUS CHRISTI, or BENE'T COLLEGE, was begun under the patronage of Henry Duke of Lancaster, in 1344, by two Religious Societies, termed Guilds, and finally appropriated in 1356. Matthew Parker, Archbishop of Canterbury, added greatly to its endowments.

1348 and 1557.—5. GONVILLE and CAIUS COLLEGE was originally founded under the appellation of Gonville Hall, by Dr. Edmund Gonville, in 1348; but greatly enlarged, under the present title, in 1557, by Dr. John Caius.

1351.—6. TRINITY HALL, originally a Hostel for the residence of students, at their own expence, was converted into a College, and endowed by Henry Bateman, Bishop of Norwich.

1443.—7. KING'S COLLEGE, the glory of the University, owes its origin and endowments to King Henry the Sixth, who, dying before the establishment was completed, left particular direction for the fulfilment of his magnificent designs, which were never fully accomplished. Edward the Fourth, instead of forwarding, retarded the work, by depriving the College of its endowments. The three succeeding Monarchs, however, directed their attention to, and liberally assisted in, the completion of the buildings. The Chapel of this College is justly admired for elegance and beauty of parts, grandeur of effect, and scientific construction.

1448. 8. QUEEN'S COLLEGE was originally founded by Margaret of Anjou, Queen of Henry the Sixth. Elizabeth, Queen of Edward the Fourth, though a professed enemy to the founder, was induced to co-operate in the pious work; and has been annually celebrated as a co-founder.

1475.—9. CATHERINE HALL owes its foundation and endowments to Doctor Robert Woodlark, who was then Chancellor of this University

1496.—10 JESUS COLLEGE was erected on the site of an ancient Benedictine Nunnery, and founded by John Alcock, Bishop of Ely. The Chapel, from the size and character, appears to have been the conventual church which was dedicated to St. Rhadagund, in 1160.

1506.—11. CHRIST'S COLLEGE, which was built on the site of an Hostel, called God's House, appears to have been founded by King Henry the Sixth, and completely endowed by Margaret Countess of Richmond, mother of Henry the Seventh.

1511.—12. ST. JOHN'S COLLEGE, which derived its name from the dissolved Hospital of St. John, was originally endowed by Margaret Countess of Richmond, but greatly enlarged in its establishment by subsequent benefactions.

1542—13 MAGDALEN COLLEGE owes its origin to Edward Stafford, Duke of Buckingham, who erected part of the present fabric; but he being beheaded, this with his other property was confiscated. In 1542 Henry the Eighth granted it to the Lord Chancellor, Thomas Lord Audley, who finished and endowed it.

1546.—14. TRINITY COLLEGE, which contains the largest buildings, and possesses the most considerable endowments of any establishment in this University, was founded and endowed by King Henry the Eighth. The inner court is called Nevill's court, in memory of Dr. Thomas Neville, at whose expence it was chiefly built in 1609.

1584.—15. EMANUEL COLLEGE, erected on the site of a Dominican Convent, was founded and endowed by Sir Walter Mildmay, Chancellor of the Exchequer to Queen Elizabeth. The Hall is esteemed the most elegant in the University

1596.—16. SIDNEY SUSSEX COLLEGE derives its foundation from Frances Sidney, Countess of Sussex, who by will, dated December 6, 1588, bequeathed 5000l. and other property for that purpose.

1809.—17. DOWNING COLLEGE is now erecting, in pursuance of the will and bequests of Sir George Downing, Bart. bearing date 1717. The Master and Fellows are appointed.

Of the two Universities many minute descriptions have appeared. Oxford is the more majestic, from the grandeur of the colleges, and other public buildings, and the superior regularity and neatness of the streets; but the chapel of King's college, at Cambridge, is supposed to excel any single edifice of the other University. Both of those magnificent seminaries impress every feeling mind with reverential awe, not only by their architectural dignity, but by a thousand collateral ideas of ancient greatness and science.

The time required by the statutes in the University of Cambridge, before a student can be qualified for taking degrees, is four years for a B. A. and three more for A. M. Seven years after he may commence B. D. and seven years more are required to take the degree of D. D. But in Law and Physic he may commence Batchelor after five years study, and Doctor at the end of five years more[7].

The year is divided into four terms at Oxford; four years or sixteen terms for a B. A. (eldest sons of Barons, Baronets, and Knights Bachelors take the degree of B. A. after three years or twelve terms; the sons of Barons may graduate sooner at the option of the Chancellor.) Three years more are required to become M. A.; seven years for a Bachelor in Music; five years more for Doctor in Music; five years for Bachelor of Laws, and five years more for LL. D. For a Bachelor of Medicine, he must be promoted firſt of all to be Master of Arts. He must afterwards attend lectures in physic three years for Bachelor of Medicine; after he becomes a Bachelor of Medicine, he must wait four years for his Doctor's degree. For Bachelor in Divinity he must wait seven years after becoming M. A. and four years more for Doctor in Divinity[8].

Female education is conducted in England with great elegance and expence. Even in the middle ranks of life, young women are generally taught music and drawing, a plan which surprises foreigners, who seldom teach these arts, except in cases of decided propensity. They are, indeed, of little or no use in future life; but they enlarge and cultivate the mind, and serve to prevent the dangers of idleness.

It must not, however, be disguised, that many complaints prevail against the mode of female education now practised, as rather tending to teach dissipation, with a superficial taste of various studies, than to infuse steady principles of conduct, and cultivate a decided taste for one or two scientific pursuits, which might prove the happiness of their leisure. Above all, the temper and habits of contentment ought to be formed; while on the contrary, every thing seems now to be taught the fair pupils, except the chief lessons they should learn, the duties of daughters, wives, and mothers.

CITIES.] In giving a brief account of the chief cities and towns in England, a few of the most important shall be arranged according to dignity, opulence, and population; and the others shall be stated without preference, in a kind of progress from the south-west to the north.

LONDON.] London, the metropolis of England, and perhaps the most populous and rich city on the face of the globe, is situated in an extensive plain, or valley, watered by the Thames, and only confined on the north by a few small elevations; being a place of great antiquity and first mentioned by Tacitus. It was in former times of far less extent, and surrounded with walls, but now includes Southwark, in itself a city, on the other side of the Thames, and Westminster, another city on the west; so that like some places of ancient geography, it might be named *Tripolis*, or three cities. The noble river Thames is here about 440 yards in breadth, and is crowned with three bridges, the most ancient of which was formerly covered with houses and shops, now removed; but the inconveniencies it presents to navigation, cannot be so easily remedied. The Thames is crowded with a forest of masts, and conveys into London the wealth of the globe, forming an excellent port, without the danger of exposure to maritime enmity. It is, however, a great defect, that instead of open quays and streets, on the banks

[7] Carter's Hist. of the University of Cambridge, p. 5.
[8] Ayliff's Account of Oxford, vol. ii. page 117, &c.

of

of the stream, the view is obstructed on both sides by irregular masses of building, which do not even admit of a path. London presents almost every variety which diversifies human existence; upon the east it is a sea-port replete with mariners, and with the trades connected with that profession. In the centre it is the seat of numerous manufactures, and prodigious commerce; while the western, or fashionable extremity, presents royal and noble splendour, amidst scenes of the highest luxury, and most ruinous dissipation.

Few cities can boast a more salubrious situation, the subjacent soil being pure gravel, by which advantage, united with extensive sewers, the houses are generally dry, cleanly, and healthy. Provisions and fuel are poured into the capital, even from distant parts of the kingdom, the latter article being coals, from the counties of Northumberland and Durham, transferred by sea, and thence denominated sea-coal[9]. The smoke is esteemed to purify the dampness of the air, but injures the beauty of the edifices; the sublime architecture of St. Paul's for instance, being obscured by sable weeds. London requires in one year 101,075 beeves, 707,456[10] sheep, with calves and pigs in proportion: the vegetables and fruits annually consumed in the year, are valued at a million sterling[11].

The population of London has by some been exaggerated to a million of souls; but by the most recent and authentic accounts, it contains about eight hundred and sixty thousand*. Its length from Hyde-park Corner on the west, to Poplar on the east, is about six miles; the breadth unequal, from three miles to one and less; the circumference may be about sixteen miles. The houses are almost universally of brick, and disposed with insipid similarity; but in recompence, most of the streets are excellently paved, and have convenient paths for foot passengers, a mark of respect to the common people, almost unknown to the capitals on the Continent. Another national feature, is the abundance of charitable foundations, for almost every infirmity and distress incident to human nature. The multitude and rich display of the shops impress strangers with astonishment, nor are they less surprized at the constant torrent of population rolling through the principal streets, nor at the swarm of carriages at all times crowding all the roads to the capital, and the nocturnal illuminations which extend even to four or five miles of the environs. Though the impression of the tide be felt as far as Staines, the Thames at London, and a considerable way below, is untainted with salt. Its waters are raised by machinery, and conducted in innumerable pipes for domestic uses, while the parts more remote are supplied with water from some small ponds near Hampstead, and from that laudable work of Middleton, the New River, which conveys a copious addition from the north. The water of the Thames is said to impart peculiar qualities to the liquor called porter; but this idea perhaps only tends to strengthen the monopoly of the London brewers, and many of the chief brewers do not use it.

The environs of London present a spectacle almost as grand and interesting as that of the metropolis itself. Extensive streets of villas and houses are continued in almost every direction, within seven or eight miles. Yet few of the public edifices in London can pretend to much magnificence. The cathedral of St. Paul's forms one of the chief exceptions; the exterior architecture of this principal cathedral of the protestant faith, being majestic to a degree of sublimity, but the interior is defective in decoration. The tombs recently ordered, in imitation of those at Westminster, will contribute to obviate

[9] Mr. Middleton, in his View of Middlesex, 1807, supposes that 700,000 chaldrons are yearly consumed in that county. Stewart on Coal, p. 191, says 886,167. [10] Ib. 643.

[11] Ibid. 336. Mr. Pennant. Brit. Zool. iv. 9 says, 60,000 lobsters are annually brought to London, from near Montrose

* Including the parishes not within the bills of mortality; that is, Mary-le-bone, Paddington, St. Pancras, Kensington, and Chelsea, amounting to 117,802. Islington and Newington Butts are within the bills.

this

this remark. In the colonnade, fountains, &c. it yields to St. Peter's at Rome; and, in general, the public edifices of London are in disadvantageous positions, without proper avenues or points of prospect. It is surprising that fountains, or jets d'eau, which so much diversify the ornaments of a city, though in a garden they be puerile, should be almost unknown in London, except a diminutive specimen in one of the courts of the Temple. Westminster-abbey may claim the next rank to St. Paul's cathedral, being not only in itself a grand impressive edifice, of the Gothic class, but as being the sanctuary of the illustrious dead, of all ranks, periods, and professions, from the victorious monarch down to the humble pedagogue. It was founded by Sebert, King of the East Saxons, was afterwards ruined by the Danes, and re-founded by Edward the Confessor, whose tomb is the most ancient now remaining. The present edifice was the work of Henry III.; and Henry VII. added an elegant chapel, and his tomb, the work of Torrigiano; in the vaults under this chapel the late monarchs and their offspring have been deposited. The body of the edifice is crowned with illustrious tombs, decreed by the nation, or erected at the expence of individuals; this part is open to general inspection; and others more retired, are displayed by the attendants for a trifling remuneration. Adjacent are the two Houses of Parliament, and Westminster Hall, a vast room, 230 feet long, and 70 wide, with a curious cieling of Irish oak[12], and apartments on the side, in which are held the principal courts of justice.

The churches and chapels exceed 200 in number, and a few are of beautiful architecture. Some are the productions of Inigo Jones; as is also the noble Banqueting House at Whitehall, with a masterly cieling painted by Rubens, representing the apotheosis of James I. The new theatre of Covent-Garden may be added as doing honour to the taste of the architect and managers.

Near London-bridge, a pillar of 193 feet elevates his bold front above most of the spires, and is called the Monument, being destined to commemorate the conflagration of London, in the reign of Charles II. The Tower is only venerable from ancient fame; and remarkable for the curiosities which it contains. The new edifice erected by the Company trading to the East Indies, has a considerable degree of elegance, and some of the halls of the companies have a respectable appearance. The bank is a structure of the Ionic order, more remarkable for intrinsic wealth than exterior magnificence. The architecture of the prison called Newgate is singularly appropriate. Somerset House presents an elegant specimen of recent architecture, but may, perhaps, in future times be found as deficient in solidity as it is at present inconvenient in the height and steepness of the stairs, and in some other respects. The terrace of the Adelphi is a pleasing piece of architecture, and presents an interesting prospect of the river. The Pantheon is an elegant edifice, resembling that of Rome, but dedicated solely to public amusements. The Royal Palace of St. James's is an irregular building, of very modest aspect. The Queen's Palace, formerly Buckingham-house, only aspires to elegant convenience, but contains some valuable paintings, and an excellent library, formed solely by the taste of the reigning monarch. The palace of Kensington presents an exuberance of valuable pictures, little known, and rarely visited. The houses in the west end of the town, of themselves shew the gentle gradations of rank in England, those of the chief nobility being rarely distinguishable from the others; the more remarkable are, Foley-house, the Duke of Manchester's; the late Mrs. Montague's, in

[12] This seems a vulgar fable. There are about 23 species of oak, of which one well known to ancient architects is now nearly extinct. It will remain fresh for many centuries, and owing to the bitterness of its juice, no spider nor other insect will live near it. See a particular account of this valuable species, whose culture deserves particular attention, in the Memoirs of the Academy of Sciences, at Paris, for 1781. It would be valuable for bedsteads, but bugs may also be eradicated from wood or walls by washing with an infusion of the bitter apple, common at the apothecaries' shops.

Portman-

Portman-square; Chesterfield-house; Lord Spencer's, in the Green-park; Marquis of Lansdowne's, Berkeley-square; Duke of Northumberland's, at Charing-cross; Burlington-house, with a fine colonade behind the front wall, and those of the Duke of Devonshire and the Earl of Bath, all in Piccadilly; nor must Cumberland-house and Carleton-house, in Pall Mall, be forgotten.

York.] Next to the capital in dignity, though not in extent nor opulence, is York, which is not only the chief city of a large and fertile province, but may be regarded as the metropolis of the North of England. The name has been gradually corrupted from the ancient Eboracum, by which denomination it was remarkable even in the Roman times, for the temporary residence and death of the Roman Emperor, Severus. This venerable city is divided by the River Ouse; and the Gothic cathedral is of celebrated beauty, the western front being peculiarly rich, the chief spire very lofty, and the windows of the finest painted glass. York divides with Edinburgh the winter visits of the northern gentry.

Liverpool.] But Liverpool, in Lancashire, is now generally allowed to approach the nearest to London in wealth if not in population, being the seat of a vast commerce, which has been continually on the increase, since the beginning of the last century, when it was merely a village. It is first mentioned in the reign of William the Conqueror: yet in Leland's time, was not even a parish, but had only a chapel, the parish-church being that of Walton. In 1699, Liverpool was admitted to the high honour of being constituted a parish. In 1710 the dock was constructed; and the chief merchants came originally from Ireland, a circumstance which has given a distinct tinge to the manners of the town. Thenceforth the progress was rapid, and in 1760 the population was computed at 25,787 souls[13]. In 1773 they amounted to 34,407, in 1787 to 56,670: at present they may be computed at between 70 and 80,000. By the parliamentary enumeration they are 77,653.

The number of ships which paid duty at Liverpool, in 1757, was 1371; in 1794 they amounted to 4,265, In the African trade, a distinguishing feature of Liverpool, there was only one ship employed in 1709; in 1792 they amounted to 132. It was computed, that between the end of August 1778, and that of April 1779, Liverpool sent out no less than 170 privateers[14]. In the recent act for the contribution of seamen to the royal navy, according to the ships registered in each, the estimate is as follows:

London,	5725	Hull,	731	Bristol,	666
Liverpool,	1711	Whithaven,	700	Whitby,	573
Newcastle,	1240	Sunderland,	669	Yarmouth,	506

Bristol.] Bristol is still a large and flourishing city, though much of its commerce with the West Indies and America have passed to Liverpool. This metropolis of the West of England gradually rose to eminence in the Anglo-Saxon period; and was so flourishing and opulent in the reign of Henry II. that, besides other charters, he granted the possession of Dublin in Ireland; and a colony from Bristol was accordingly transplanted[15]. The trade with Ireland has continued chiefly to center in this city: even in that reign, as ancient writers inform us, the port of Bristol was replete with vessels from Ireland, Norway, and other parts of Europe. Bristol is pleasantly situated at the confluence of the Froome with the Avon. Besides the cathedral, there is a large church of Gothic construction, that of Redcliffe, founded in the thirteenth century, and improved and repaired by Canyng or Canyngs, an opulent merchant of the fifteenth century, celebrated by William of Worcester[16]. In the treasury-

[13] Aikin's Man, 333. et seq. [14] Ibid. 364. 371. [15] Barret's Bristol, 49, 57. [16] Ibid. 573, 627.

room

room of this church, is an ancient chest, the source ascribed to several literary forgeries.

The trade of Bristol is chiefly with Ireland, the West Indies, or North America, Hamburgh, and the Baltic; that with Guinea, not the most laudable, had been resigned to Liverpool. By the navigation of the two rivers Severn and Wye, Bristol also engrosses most of the trade of Wales. In 1787, there sailed from Bristol about 1600 coasting vessels, and 416 ships engaged in foreign commerce [17]. Inhabitants about 68,645.

The hot-wells at Clifton, in the neighbourhood, appear to have been known in 1480; but the water was chiefly used externally, till about the year 1670, when a baker dreaming that his diabetes was relieved by drinking the water, he tried the experiment and recovered [18]. Since that period its reputation has increased, and many commodious and elegant erections have contributed to recommend these wells to invalids. In the adjacent rocks are found beautiful crystals, which, before the introduction of artificial gems, were greatly in fashion for female ornaments.

BATH.] The proximity may here authorize the mention of Bath, esteemed the most elegant town in England. The hot-baths, from which it derives its name, were known in the Roman times, nor was their celebrity lost even in the dark period of Anglo-Saxon history. But the town has been greatly enlarged and decorated in the last century. The waters are used both internally and externally, chiefly in gouty, bilious and paralytic cases, being frequented at two times in the year, what is called the spring season from April to June, and the autumnal from September to December. Two-thirds of the company are attracted merely by amusement, society, and dissipation, in all which it is only second to London. Situated in a vale, Bath is very hot in summer. The houses are constructed of white stone, which abounds in the vicinity, being a free-stone or lime-stone, similar to the Portland. In 1801, the inhabitants were 32,200.

But next to Bristol, in point of opulence, must be classed the towns of Manchester, Birmingham, and Sheffield.

MANCHESTER.] Manchester, in Lancashire, was known in the Roman times under the name of Mancunium, a small Roman station; but it continued in obscurity till the time of Elizabeth [19], when Camden mentions its manufacture of woollen-cloths, then called *cottons*. During the civil wars under Charles I. Manchester remained in the hands of the Parliament. In 1708, the inhabitants were only computed at 8000. In 1757, they fell short of 20,000, at present they amount to 84,200, this being the next town after London in population. The cotton manufactures of Manchester are sufficiently known over Europe; and the machinery, greatly indebted to the genius of an Arkwright, excites astonishment at the progress of human art and industry [20].

BIRMINGHAM.] Birmingham, in Warwickshire, was originally a village, belonging to a family of the same name, whose monuments remain in the old church. Leland mentions it as a town inhabited by smiths and cutlers, in the time of Henry VIII.; and by lorimers, now called bit-makers. The extension and improvement of Birmingham originated in a great degree from Mr. John Taylor, who introduced the manufacture of gilt buttons, and japanned and enamelled works; but the toy manufacture was known in the reign of Charles II. The great fabric, called Soho, belonging to Messrs. Boulton and Watts, is situated about two miles from Birmingham, but in Staffordshire. Between the years 1741 and 1790, Birmingham had received an augmentation of seventy-two streets, 4172 houses, and 23,320 inhabitants [21]; the present population is computed at 73,670.

[17] Barret's Bristol, 93. [18] Ibid. 190. [19] Aikin's Man. 145.
[20] Aikin's Manchester, 149, 156. [21] Hutton's Hist. of Birmingham.

SHEF-

SHEFFIELD.] Sheffield, in the most southern part of Yorkshire, is styled by Leland the chief market-town in Hallamshire (for in the North, many particular districts usurp the name of shires). The company of cutlers of Hallamshire, was established by act of Parliament in 1625; but Sheffield had been distinguished for a kind of knives, called whittles, and other articles of cutlery, as early as the thirteenth century; yet, till within the last half century, the manufactures of Sheffield were conveyed weekly to the metropolis, on pack-horses. In 1751, the river Don was rendered navigable to within two miles of the town, which facilitated the export. The plated goods commenced about 1758. In the year 1615, the population only amounted to 2152; in 1755 to 12,983; in 1789 about 30,000. At present the population may be about 35,000[18].

The other chief towns in England, not aspiring to such pre-eminence, though several be of far more importance than others, shall be classed, as before mentioned, in a kind of geographical order, beginning at the South-west, and proceeding to the North.

FALMOUTH.] Falmouth, in Cornwall, the most westerly port in England, is chiefly remarkable for the arrival and dispatch of packet boats, and is now forming into a naval depot; but Exeter, in the adjacent county of Devon, is an ancient and respectable city. It is the seat of an extensive commerce in coarse woollen goods, manufactured in a part of Somersetshire, and in Devon and Cornwall[19]. They are exported to Italy, and other parts of the Continent, to the annual value, as is supposed, of 600,000*l.*, and the East India Company purchase yearly to a considerable amount. Besides the native wool of the above mentioned counties, Exeter imports from Kent about 4000 bags a-year. Some ships are also occupied in the cod-fishery of Newfoundland, and in the Greenland capture of whales. The imports are from Spain, Italy, Hamburgh, and the Baltic; and coals from the North of England and Wales. It is, moreover, the residence of many genteel families; and the frequent resort of others from the neighbouring counties.

PLYMOUTH.] Plymouth is a celebrated port with a population of 43,194.

DORCHESTER.] Dorchester, the chief town of the county of Dorset, is a place of considerable antiquity, situated on the river Frome; but has no manufactures, and is only celebrated for its malt liquor.

SALISBURY.] Salisbury, the principal town of Wiltshire, is chiefly remarkable for extreme neatness, and for its cathedral, a beautiful piece of Gothic architecture, with the loftiest spire in England, the height being 404 feet. There is a manufacture of flannels, and another of cutlery goods and hardware, the superiority of the scissars being particularly noted. Wilton, in the same county, is famed for the manufacture of beautiful carpets.

WINCHESTER.] Winchester, the chief city of Hampshire, was for many centuries, the metropolis of England, a pre-eminence which it did not wholly lose till the thirteenth century[20]. The port was Southampton, but the superior safety and convenience of that of London, gradually restored the latter to that metropolitan dignity which it held in the Roman period. Winchester remains a venerable city, with many vestiges of ancient fame and splendor. It is situated in a bottom, amid open chalky downs, upon the small river Itchyn. The cathedral rather impresses the idea of majestic gravity, than of magnificence; and has no spire, having been erected before that mode of architecture was used. The ashes of several Saxon monarchs are here preserved with reverence. Not far from the cathedral stands the celebrated college, founded by William of Wickham, and which has sent forth many illustrious characters. The regulations of this school are, in some instances, peculiar and severe; but in this, and

[18] Aikin's Man, 539. et seq. [19] Aikin's Engl. delineated, p. 335. [20] Milner's Winchest.

the other grand English seminaries, the equality of the pupils, except in respect of age and abilities, and even the subserviency in which the younger are held by the elder, tend to steel and fortify the mind against the subsequent cares and emulations of life. In the center of the city is a small, but most elegant Gothic cross; and at the western extremity is the shell of a palace, built under the direction of Sir Christopher Wren, yet heavy and inelegant; it was begun by Charles II. but left unfinished at his death. It has since been used for French prisoners, and in 1796 was the residence of about 640 emigrant priests from France.

PORTSMOUTH.] In the same county is situated Portsmouth, the grand naval arsenal of England. The harbour is noble and capacious, narrow at the entrance, but spreading out into an inland bay, five or six miles in length, and from two to four in breadth. The advantages derived from nature have been improved by the art and industry of successive generations; and to a patriot, Portsmouth presents one of the most interesting scenes in the British dominions. The regular fortifications towards the land, in themselves happily a novelty to the British eye; the magnitude and variety of the maritime objects and manufactures, and the prospect of Spithead, the grand focus of naval armament, conspire, with a thousand relative ideas concerning the power of England, supreme in every sea, to excite our astonishment and exultation.

LEWES.] Lewes is esteemed the chief town of Sussex; the situation is lofty and picturesque, especially the site of the ancient castle, belonging to the powerful Earls of Warren and Sussex. Beneath, in a pleasant plain, watered by the river Ouse, stands the ruins of an ancient nunnery.

CHICHESTER.] Chichester retains some little traffic, but is chiefly regarded as an ancient city, and a bishop's see.

BRIGHTHELMSTONE.] Brighthelmstone is a fashionable resort for the sea air and bathing; an extensive beach extends four miles under lofty cliffs, and on the other side are wide open downs, composed of numerous verdant hills, diversified with winding cavities: towards Shoreham are some pits of a kind of bitumen, which might, perhaps, be used in some manufacture. When dried and rolled by the waves, it forms balls of various sizes, frequent on the beach, and formerly used as fuel by the poor, though since forbidden, on account of the noxious smell. Brighthelmstone not only presents the nearest open shore to the capital, but is distinguished for the peculiar mildness and salubrity of the air.

CANTERBURY.] Canterbury, the chief town of Kent, and the metropolis of the English church, is chiefly remarkable for ecclesiastical antiquities; and the county town is Maidstone, noted for hops and thread. Kent presents many other important towns, as Deptford, Greenwich, Woolwich, Gravesend, Chatham, Rochester, and the fashionable resorts of Margate, Ramsgate, and Tunbridge. Dover and Deal are remarkable havens.

Having completed this brief survey of the chief towns to the south of the Severn and the Thames, those of the middle and northern counties may be again commenced from the west.

HEREFORD.] Hereford, the capital of a county bordering on Wales, was known in the Saxon times as an episcopal see. The castle supposed to have been founded in the reign of the Confessor, was on the left bank of the river Wye. The cathedral is large, but the town presents little remarkable, having gone into great decay: the only manufacture is that of gloves[21].

GLOUCESTER.] Gloucester, the capital of the county so called, is admired for the regularity of the four principal streets, joining in the center of the city. It avails

[21] Gough's Camden, ii. 450.

itself of the traffic of the Severn, which, among other fish, affords a luxurious supply of lampreys. This town has been recently celebrated for its neatness, and the cheapness of provisions. Some ships have been lately fitted out for the Portuguese trade.

WORCESTER.] Worcester is also situated on the noble river Severn, over which there is a beautiful bridge. The manufactures are chiefly gloves, stuffs, and carpets; and the porcelain maintains a high reputation.

COVENTRY.] On the east, the first town of note is Coventry, esteemed the most inland and centrical of the English towns, whence, perhaps, the military phrase of sending a man to Coventry, where he would be the most remote from service. The manufactures are chiefly ribbons, with a few gauzes and camlets. The beautiful cross erected in 1541, after being much damaged by the lapse of years, has been taken down[22].

NORWICH.] The next memorable place is the city of Norwich, the capital of Norfolk. It is, however, not mentioned till the year 1004, when it was ruined by the Danes. The worsted manufactory is supposed to have been introduced here by the Flemings, in the 12th century, and was followed by that of sayes, arras, bombazeens, &c. Of late the damasks, camlets, crapes, stuffs, &c. here wrought, have been computed at the yearly value of 700,000*l.*; but the fashionable use of cottons, and the interruption of commerce by war, have considerably lessened the consumption. The wool is chiefly from the counties of Lincoln, Leicester, and Northampton; the chief exports to Holland, Germany, and the Mediterranean[23]. Norwich is of course opulent and extensive; but the streets are confined and devious.

YARMOUTH.] Yarmouth is a noted sea-port, with a beautiful quay, and remarkable for its fisheries of mackarel in May and June, and herrings in October and November: the latter cured by salt, and dried in the smoke of wood, are called red-herrings, and, besides home consumption, form a considerable article of export to Spain and Italy.

LINCOLN.] In proceeding northwards, Lincoln must arrest attention, though now much fallen from its former fame. The interior of the cathedral is admired for its lightness and magnificence. The sheep of the county form a celebrated breed, but the wool goes chiefly to Norwich. Lincoln trades in coals, imported on the Trent.

DERBY.] Derby, which gives name to the county so called, is a neat town on the river Derwent, with five parishes, and a population of about 11,000 souls. In 1734, the first mill for throwing silk was here established, the model having been brought from Italy. There is a singular and unique manufacture at Derby celebrated all over Europe, that of the fluor, which is raised from the lead mines in masses of such a size and beauty as have never yet been discovered in any other region of the world*. This beautiful substance is formed into elegant vases, and other ornaments, the manufacture being conducted by the proprietors, Messrs. Brown and Mawe, of Tavistock-street, Covent-garden, and the machinery worked by a steam-engine, well deserves the attention of the traveller. There is also a branch at Castleton, and a museum has lately been opened at Matlock bath, for the display and sale of the natural productions of this interesting county, besides a variety of other curiosities of nature and art, from different parts of the globe — an establishment which may not only promote natural history, but must be an agreeable addition to the amusements of that romantic spot.

CHESTER.] In a chorography of England, Leicester and Shrewsbury might de-

[22] Gough's Camden, vol. ii. p. 345. [23] Aikin, 216.

* Patrin mentions that in Siberia the chimnies are sometimes lined with fluor, which after the fire has been lighted for some time, emits a beautiful green and blue light. This phosphorescent kind is green, and only found in small fragments in a lead mine in Daouria, near the river Amur.

serve description, but its geography can only embrace the most important topics. The city of Chester must claim the next consideration. It is of Roman origin, and the chief streets are singular in their construction, being excavated beneath the level of the ground, while a covered portico, in the front of the houses, affords an elevated and sheltered foot-path; beneath are the shops and warehouses, on the level with the street, to which the passenger descends by occasional stairs. The trade of Chester is not considerable, but it carries on a share of the traffic with North Wales; and its two annual fairs are famous for the sale of Irish linens. It is the favourite residence of many genteel families from Wales[24].

LANCASTER.] Near an extensive bay of the Irish Sea, which might now be termed the bay of Lancaster, while antiquaries affect to retain the Roman name of *Moricambe*, stands Lancaster, an ancient and populous town. The name is in the North pronounced Loncaster, the proper etymology, as it stands upon the river Lon. When the counties of Cumberland and Westmoreland belonged to the Scots, this was regarded as a kind of frontier place, and was defended by a strong castle, situated on a commanding eminence. Lancaster afterwards gave the title of Duke to Princes of the Royal blood; and the contentions of the Houses of York and Lancaster are well known. There is a bridge of five arches over the Lon, which opens into a considerable haven; the seat of a moderate commerce, especially with the West Indies. A noble aqueduct has been constructed by Mr. Rennie.

HULL.] On the East, the extensive province of Yorkshire contains many flourishing towns, besides the capital, York, and Sheffield, already described. On the Humber, the wide receptacle of many rivers, stands the great sea-port of Hull, or Kingston-upon-Hull; the latter name being only that of the rivulet. The town was founded by Edward I. Several privileges were obtained from Richard II.; and the first staple of trade was stock-fish imported from Iceland. In the civil wars of last century, Hull displayed the first flag of defiance against the Monarch. The harbour is artificial, and is supposed to present the largest dock in the kingdom. The trade is important with America, and the south of Europe, but chiefly with the Baltic; and several ships are employed in the northern whale-fishery. The coasting traffic is extensive in coals, corn, wool, and manufactories; and Hull supplies the commerce of many northern counties, having not only communication with the Trent, and other branches of the Humber, but with the rivers and canals of Yorkshire[25].

LEEDS.] Leeds, Bradfield, Halifax, and Wakefield, are the chief centres of the great manufactures of woollen cloths and stuffs. Leeds is the principal mart for broad cloths, or what foreigners term fine English cloth. It is situated on the river Eyre, in an extenſive vale; and the population is computed at 53,162, being the fifth town on this scale; the cloths are woven in the neighbouring villages, but are dyed, prepared, and sold at Leeds. The cloth-hall appropriated to the sale is a vast edifice; and the whole business is transacted within the space of an hour on the market days. Halifax is an elevated situation, and very populous. It is the chief market for the thinner woollen cloths, such as stuffs, calimancos, &c. Scarborough, on the eastern coast, is a place of celebrated resort for sea-bathing, and the mineral water; the site is romantic, but the port is small, and chiefly frequented by fishing vessels.

DURHAM.] Durham is a pleasant and venerable city, extending partly over an eminence; the river Were, winding around in the form of a horse-shoe, renders it peninsular. Near the neck of land is placed the castle, of which little more than the keep remains; which is surrounded by the pleasant garden of the Bishop's adjacent palace. Towards the point of the peninsula stands the cathedral,

[24] Pennant's Tours. Aikin, 90. [25] Aikin, Engl. delin, 56.

a most august edifice, in a most august situation, with deep declivities on the south and west, down to the river; the banks of which are finely wooded; and rich in the wild beauties of nature, which have been improved, not injured, by the taste and opulence of the clergy. The bridge on the east is narrow and meanly executed; but on the south there is an elegant and modern bridge; and on the west that of Bishop Flambard is admired for the lightness and beauty of the arches. About a mile from the town, on this side, stands Nevil's Cross, where David II. King of Scotland, was taken prisoner, after a bloody conflict. The cathedral was built about the year 1004, at least the lower part, which belongs to what is called the Saxon form of architecture; and is now repairing at the expence of the Bishop and Chapter. Some branches of the woollen manufacture are carried on at Durham, and a few elegant carpets have been lately made there in a kind of Mosaic form.

Stockton on the river Tees, Sunderland at the mouth of the Were, and South Shields on that of the Tyne, are sea-port towns in the bishopric, (for so the county of Durham is commonly styled in the North,) of considerable size, trade, and population. Hart-le-pool is only a bathing place.

NEWCASTLE.] On the river Tyne stands Newcastle, so termed from a fortress erected by Edward I. This is a large and populous town, placed in the centre of the grand coal mines in the counties of Durham and Northumberland, which have for centuries supplied London, and most of the east and south of England, with that fuel; which has perhaps contributed more to the manufactures and commerce, and consequent wealth and power of this kingdom, than any other material or circumstance. The coal fleets sometimes amount to five hundred sail; their station is at Shields, and the quays of Jarrow and Willington. Even as a nursery of seamen the trade is invaluable[26]. In all parts of the neighbourhood are seen large carts, loaden with coals, and proceeding towards the port, on inclined planes, without the help of horses or men, to the great surprize of the stranger[27]. Near Newcastle are also found quarries of grind-stone; and many glass-houses smoke around, the productions of which have been recently of remarkable purity. Other exports are pickled salmon, lead, salt, butter, and tallow. The suburb of Gateshead stands on the south of the Tyne; and is connected with the city by a grand bridge. The shops and crowded streets recal the idea of London; but the latter are generally narrow, steep, and incommodious.

CARLISLE.] Berwick-upon-Tweed being on the Scottish side of the river, ſhall be reserved for the description of that country. The chief remaining town in England is Carlisle, the capital of the county of Cumberland, placed at the confluence of the rivers Pettril and Caldew, with the Eden[28]. The old fortifications remain nearly entire. It is supposed to have been the ancient Luguballia; but neither the castle nor cathedral are remarkable. The chief manufactures are linens, printed and checked, whips and fish-hooks. The town is little populous; and is chiefly memorable for transactions in the ancient wars between Scotland and England.

WALES.] A country abounding in the sublime and beautiful features of nature, contains many towns of note; and the description of a few has been reserved to this place, for the greater clearness of arrangement.

SWANSEA.] Swansea is on many accounts entitled to be ranked as the first town in Wales. By the returns its population is estimated at 6099, which is considerably under the real amount. It possesses a very commodious and safe harbour, lately greatly improved by the erection of two fine piers. Its trade in coals, copper, &c. is very extensive. It stands at the mouth of the river Tawe; which is navigable about three miles

[26] Gough's Camden, iii. 252. [27] St. Fond, Voyage en Angl. i. 163.
[28] Gough's Camden, iii. 175. For the rivers, Housman 30.

above

above the town. It once possessed a fine castle, very considerable remains of which are still preserved in good repair. It is a fashionable resort for bathers in the summer season.

CAERMARTHEN.] Caermarthen, the capital of a county, is also regarded as the principal town in South Wales; it stands upon the river Towy, and was anciently defended by a castle, now demolished. The haven is shallow, and the trade of course not very considerable [29].

PEMBROKE.] Pembroke, on a creek of Milford Haven, is a small town of little commerce.

CAERNARVON.] Caernarvon is esteemed the chief town of North Wales, for the beauty of the situation, regularity of the streets, and above all for the grandeur of the castle, one of the most magnificent in Europe, founded by Edward I. in 1282. Here was born Edward II. surnamed of Caernarvon, who was immediately created the first English Prince of Wales, his father having equivocally promised to the vanquished Welsh a Prince born in their own country, and who could not speak one word of English. The town has a considerable trade with London, Bristol, Liverpool, and Ireland; and has a beautiful quay along the side of the Menai, a strait between North Wales and Anglesea [30].

EDIFICES.] In a brief enumeration of the principal edifices in England, the royal palaces demand of course the first attention; the chief buildings of London having already been mentioned in the account of that capital. Windsor castle, situated on an eminence, near the Thames, has an appearance truly grand, and worthy of the days of chivalry. The view extends as far as the cathedral of St. Paul's, and the whole scene strongly impresses the circumstances so vividly delineated in Gray's pathetic ode on Eton College. This palace contains many noble paintings, particularly the cartoons of Raphael. Hampton-court is in a low situation, ornamented with aqueducts from the river Colne. This palace is also replete with interesting pictures. The royal gardens alone remain at Richmond, but are totally eclipsed by those of Kew, which are truly worthy of a great and scientific prince; the ground, though level, is diversified with much art, and the collection of plants from all the regions of the known world, fills the admirer of nature with delight and surprize. They are so disposed, that every plant finds as it were its native soil and climate, even those that grow on rocks and lava, having artificial substitutes.

The royal palace at Greenwich has been long abandoned, but the observatory does credit to science. It is a plain edifice, well adapted to astronomical observations, and at present ably superintended by Dr. Maskelyne. Dr. Herschell's observatory, instead of containing his telescope, is suspended from it in the open air, at Slough, near Windsor; where he is continually extending the bounds of astronomical knowledge.

Among the houses of the nobility and gentry, or palaces, as they would be termed on the Continent, the first fame, perhaps, belongs to Stowe, the seat of the Marquis of Buckinghamshire, which, for its enchanting gardens, has been long celebrated. When Mr. Beckford's magnificent erections at Fonthill are completed, that fame will be far surpassed. The present intention, however, will be better accomplished by a brief view of the edifices, as they occur in the order of counties above arranged.

Cornwall.—Mount Edgecombe, Lord Edgecombe.
Devonshire.—Powderham-castle.
Wiltshire.—Wilton, Earl of Pembroke's; Fonthill-Abbey, Mr. Beckford's; Longleate, Lord Weymouth; Wardour-castle, Earl of Arundel; Stour-head, Sir R. C. Hoare.
Hampshire. — The Grange, Mr. Henley; the Vine, Mr. Chute.

[29] Gough's Camden, ii. 504. 507.

[30] Pennant's Wales, ii. 223. 227.

Surry. — Earl Spencer's at Wimbledon ; Farnham-castle, Bishop of Winchester ; Oatlands, Claremont, Esher; Dulwich, Lord Thurlow.

Sussex. — Arundel castle, Duke of Norfolk ; Goodwood, Duke of Richmond ; Cowdray.

Kent. — Knowle, Duke of Dorset ; Penshurst, near Tunbridge, a famous seat of the Sydney's, &c.

Essex. — Wanstead, Earl of Tilney ; Audley-end; Havering, Duke of Ancaster.

Middlesex. — Sion-house, Duke of Northumberland ; Osterly-park, Mr. Child ; Holland-houſe, Lord Holland, &c. &c.

Bucks. — Clifdon ; Stowe ; Bulstrode, Duke of Portland, &c. &c.

Oxfordshire. — Blenheim, Duke of Marlborough ; Ditchley, Earl of Litchfield; Newnham, Earl of Harcourt, &c.

Gloucestershire. — Badminton, Duke of Beaufort ; Berkley-castle, Earl of Berkly ; King's Weston, Lord de Clifford.

Herefordshire. — Aconbury, Duke of Chandos ; Brampton Bryan, Earl of Oxford ; Clifford-castle, Lord Clifford.

Worcestershire. — Crome-court, Earl of Coventry; Hartlebury, the Bishop ; Hagley, Lord Lyttleton. The Leafowes of Shenstone is in Shropshire.

Warwickshire. — Tamworth-castle, Earl Ferrers ; Warwick-castle.

Northampton. — Althorp, Earl Spencer; Easton, Earl of Pomfret ; Burleigh, Earl of Stamford ; and Apthorp, Earl of Westmoreland

Bedfordshire. — Wooburn-abbey, Duke of Bedford ; Luton, Marquis of Bute.

Hertfordshire. — Hatfield Earl of Salisbury ; Moore-Park, Lord Dundas.

Huntingdonshire. — Kimbolton-castle, Duke of Manchester; Bugden, Bishop of Lincoln.

Cambridgeshire. — Thorney-abbey, Duke of Beaufort ; Maddingly, Sir John Cotton ; Milton, Mr. Knight.

Suffolk. — Euston-hall, Duke of Grafton ; Broome-hall, Lord Cornwallis.

Norfolk. — Houghton, Lord Cholmondley; Raynham, Lord Townsend ; Holkham, Earl of Leicester.

Lincoln. — Grimsthorpe, Duke of Ancaster.

Rutlandshire. — Okeham and Burley, Earl of Winchelsea ; Ashton, Earl of Cardigan.

Leicestershire. — Belvoir-castle, Duke of Rutland ; Croby, Earl of Stamford.

Nottinghamshire. — Nottingham-castle, Duke of Newcastle ; Welbeck, Duke of Portland ; Worksop, Duke of Norfolk.

Derbyshire. — Chatsworth, Duke of Devonshire ; Keddleston, Lord Scarsdale.

Staffordshire. — Beau Desert, Earl of Uxbridge ; Dudley-castle, Lord Dudley, &c.

Shropshire. — Okeley-park, Lord Clive ; Atcham, Lord Berwick, &c.

Cheshire. — Cholmondley-hall, Earl of Cholmondley ; Eaton-hall, Earl of Grosvenor.

Lancashire. — Stonyhurst, Duke of Norfolk; Knowsley, Earl of Derby.

Yorkshire. — Sheffield-manor, Duke of Norfolk ; Wentworth-castle, Earl of Strafford ; Wresel-castle ; Castle Howard, Earl of Carlisle ; Whalton-castle, Earl of Aylesbury ; Hornby-castle, Earl of Holderness ; Kiveton, Duke of Leeds, &c. &c.

Westmoreland. — Pendragon-castle, Louther-Hall, Lord Lonsdale ; Appleby, Earl of Thanet.

Cumberland. — Greystock-castle, Duke of Norfolk ; Naworth, Earl of Carlisle.

Durham. — Raby-castle, Earl of Darlington; Bishops Aukland, Bishop of Durham ; Lumley-castle, Hilton-castle, &c. &c.

Northumberland. — Alnwick, Duke of Northumberland ; Morpeth-castle, Earl of Carlisle, &c.

Wales abounds in elegant edifices, as Winstay, the seat of Sir William Watkins Wynne ; Lord Bulkley's, near Beaumarais ; Duke of Beaufort's, in Brecknockshire ; Chirk-castle, in Denbighshire ; Hawarden-castle, in Flintshire ; Swansey and Cardiff-castles, in Glamorganshire; Powis-castle, in Montgomery ; Picton-castle, in Pembrokeshire, &c. &c.*

Among public buildings must not be omitted the noble hospitals for seamen and soldiers, at Greenwich and Chelsea. Many of the county-halls have no inconsiderable claims to elegant architecture.

BRIDGES.] The bridges are worthy the superiority of the English roads : and a surprising exertion in this department, is the recent construction of bridges in cast iron, an invention unknown to all other nations. The first example was that of Colebrook-dale, in Shropshire, erected over the Severn, in 1779. This bridge rests on

* This list may perhaps appear to foreigners somewhat extraneous in a work of Geography ; but they will reflect that it is characteristic of the country in which the nobility and gentry pass a great part of the year in rural life, instead of a perpetual residence in cities, as in Spain. The late Lord Orford has more than once observed to the Author, that if pictures and statues thus dispersed throughout the country, were collected in a city or two, as in other countries, we should be surprised at our own opulence.

abut-

abutments of stone-work, the main rib consisting of two pieces, each 70 feet long, connected by a dove-tail joint, fastened with screws; the shorter ribs, cross-stays, braces, &c. &c. would be little intelligible without a delineation. The road over the bridge is made of clay and iron slag, 24 feet wide, and one deep; the span of the arch 100 feet 6 inches; height from the base line to the centre 40 feet; the weight of iron employed 371 tons 10 hundred weight[31]. Another iron bridge has since been erected in the vicinity. A stupendous iron bridge was thrown over the harbour at Sunderland, about five years ago; the height of which is 100 feet, and the span of the arch 236. The chief defect of the bridge at Colebrook was understood to be, that it formed one entire whole, incapable of partial repairs; but that at Sunderland is composed of detached pieces of cast-iron, which if damaged in any of the parts, may be withdrawn, and replaced by others. It is supported between two strong and elevated stone piers; and the arch is surmounted at either end by vast hoops, supporting the platform, or passage of the bridge, which is thus rendered almost level. When viewed from beneath, the elegance, lightness, and surprising height, excite admiration; and the carriages appear as if passing among the clouds.

Several other bridges have been constructed on this new and singular plan, but not of sufficient importance to demand description, after such great examples. Many projectors have eagerly contended for the rebuilding of London bridge; if cast-iron were employed, it would be more commodious for navigation, and would impress the beholder with astonishment, at the unrivalled pomp and grandeur of English manufactures.

Inland Navigation.] This article is important to the best interests of the country, and demands particular attention. It is believed that what is called the Caerdyke, extending from the river Nyne, a little below Peterborough, into the river Witham, three miles below Lincoln, was intended for inland navigation: this canal is about 40 miles in length, and must have been originally very deep, though now almost filled up[32]. It is supposed to have been a work of the Romans. No trace of further exertion in this department appears, till the year 1608, when the canal or rather aqueduct, called the New River, was projected and begun by Sir Hugh Middleton; it was finished in five years, and winds through a long course from Ware in Hertfordshire, to the grand cistern of Islington. But, in fact, the earliest Inland Navigation that can be authenticated, is the Sankey canal, leading from the coal-pits at St. Helen's in Lancashire, to the River Mersey, and constructed in order to convey coals to Liverpool[33]. The length of the canal is twelve miles, with a fall of ninety feet. The act of parliament passed in 1755; the original intention was only to render the rivulet called Sankey Brook, navigable; but it was found more advantageous to form a canal along its course. The surveyor was Mr. John Eyes.

But the Duke of Bridgewater is justly venerated as the grand founder of inland navigation: his spirit and opulence were happily seconded by Brindley, than whom a greater natural genius in mechanics never existed. It was in the year 1758 that the first act was obtained for these great designs. The first canal extends from Worsley mill, about seven computed miles, a circuit of two miles being necessary for the sake of the level. In this short space almost every difficulty occurred that can arise in similar schemes; but mountains and rivers yielded to the genius of Brindley. There are subterranean passages to the coal in the mountain of near a mile in length, sometimes cut through the solid rock, and occasionally arched over with brick; with air-funnels to the top of the hill, some of them 37 yards perpendicular. This beautiful

[31] Gough's Camden, ii. 417. [32] Philips, Hist. of Inland Navigation, 1795, 4to. p. 72.
[33] Ibid. Addenda 29.

canal

canal is thrown over the river Irwell, by an arch of 39 feet in height, and under which barges pass without lowering their masts. Yet the expence of this noble canal, in the then comparatively cheap state of labour and provisions, was only computed at 1000 guineas a mile. The various machines and inventions of Brindley for its construction and preservation deservedly excite wonder, but a detail cannot be here expected. The Duke of Bridgewater soon afterwards extended a canal of 29 miles in length, from Longford bridge, in Lancashire, to Hempstones, in Cheshire.

After this deserved tribute to the fathers of inland navigation in England, it will be eligible to review the other canals in a geographical manner, proceeding from the north to the south. In the county of Durham, a canal was projected by Brindley, from the romantic village of Winston, on the river Tees, to Staindrop, and thence by Darlington to Stockton: but this design, and others not yet carried into execution, will be passed over, and only the most important of those which have been executed shall be commemorated.

First in order is the Lancaster canal, extending from Kendal, in Westmorland, by Lancaster, to West Houghton, in Lancashire, a space of about 74 miles.

The canal from Leeds to Liverpool, directed in a northerly course by Skipton, winds through an extent of 117 miles; and from this canal a branch also extends to Manchester, begun in 1771.

From Halifax to Manchester is another considerable canal, commonly called that of Rochdale; length 31 miles and a half, begun in 1794.

Another canal extends from Manchester towards Wakefield; and another called the Peak Forest canal, stretches from the former, south-east, about 15 miles.

Another joins the river Dun, several miles above Doncaster, to the river Calder, near Wakefield.

To pass several of smaller note, the Chesterfield canal extends from Chesterfield, in the county of Derby, to the Trent, at Stockwith, a course of 44 miles and three quarters, begun in 1770.

In Lincolnshire, one canal extends from Lincoln to the Trent, and another from Horncastle to Sleaford. Grantham canal reaches from that town to the river Trent, a course of 30 miles.

The grand design of Brindley was to join, by inland navigation, the four great ports of the kingdom, Bristol, London, Liverpool, and Hull. Liverpool is accordingly connected with Hull by a canal from that long navigable river the Trent, and proceeding north to the Mersey. The canal which joins these two rivers is styled the Grand Trunk; and was begun in 1766, under the direction of that great engineer; but was not completed till 1777; the length is 99 miles. It was attended with great difficulties, particularly in passing the river Dove, in Derbyshire, where there is an aqueduct of 23 arches, the tunnel through the hill of Hare-castle, in Staffordshire, is in length 2880 yards, and more than 70 yards below the surface of the ground, and was executed with great labour and expence[36]. But the utility corresponds with the grandeur of the design: salt from Cheshire, coals and pottery from Staffordshire, and manufactures from various places, are transported on this canal.

From the Grand Trunk five or six branches extend in various directions: among which must not be omitted that to the river Severn, near Bewdley, which connects the port of Bristol with those of Liverpool and Hull; the length is 46 miles; completed in 1772.

From the city of Chester one canal extends to the Mersey, and another to Nempt-

[36] Cary's Plans, p. 26, 27, 28. The account of the Grand Trunk in Philips, is very defective; he may here be referred to in general for the others. See also Houseman, 122.

wich; another proceeds south to Shrewsbury, uniting the Mersey and the Severn; with north-west and south-east branches of considerable length.

From Coventry, in the centre of the kingdom, canals extend to the Grand Trunk; to Ashby-de-la-Zouch, and to the Braunston, or Grand Junction canal.

What is called the Staffordshire canal, extends from the Grand Trunk to the river Severn; and is met by the Kington canal, which reaches to Kington, in Herefordshire, so as almost to join the rivers Trent and Wye. It may be here observed, that in this description the grand courses of navigation are attended to, rather than the minute names and divisions of the canals.

Several inland navigations pass by Birmingham. The Union canal completes a coarse of 43 miles and three quarters, from Leicester to Northampton, whence the river Nen is navigable to the sea.

Another canal extends from Gloucester to Hereford: and the south of Wales presents several navigations of considerable length, particularly that from Brecon, in Brecknockshire, to Newport, in Monmouthshire.

The Severn is not only joined with the Trent and the Humber, by various courses of navigation, but is united with the Thames, by a canal extending by Stroud to Lechlade, a course of near 40 miles.

Other canals branch out from the Thames in various directions: that of Oxford extends to the Grand Trunk, or rather joins the Coventry canal, after a course of 92 miles.

The Braunston or Grand Junction canal, reaches from Brentford, on the Thames, or even from Paddington, and joins the Oxford canal at Braunston, in Northamptonshire, after a course of 90 miles. It is styled the Grand Junction, because it may be said to unite the numerous courses that pervade the central counties, with the capital of the kingdom.

On the south of the Thames, a canal proceeds from Reading to Bath; and another from Weybridge to Basingstoke; and a third from Weybridge to Godalming.

A small canal or two have been executed in Devonshire. The Andover canal, in Hampshire, extends from Andover to Southampton water. Sussex presents two canals, that of Arundel, and that of Lewes.

When we reflect that all these laudable efforts of improvement and civilization have been executed within these forty years, there is room for well-grounded hopes, that in the course of centuries the kingdom may be intersected, like another China, with innumerable canals, to the inconceivable advancement of agriculture, commerce, and the national industry and prosperity. The sum already expended in these noble works, has been computed at five millions and a half; but how much more usefully employed, than in fruitless wars, which consume fifty millions in one year!

MANUFACTURES AND COMMERCE.] The manufactures and commerce of England, form so extensive a theme, that only a brief and fugitive idea of them can be here attempted. The earliest staple commodity of England was tin; a metal rarely found in other countries. The Phœnicians first introduced it into commerce, at least five or six hundred years before the Christian æra; and their extensive trade soon diffused it among the Oriental nations. The Romans, upon their conquest of these regions, did not neglect this source of wealth; but as Cornwall was not conquered by the Anglo-Saxons till the reign of Athelstan, we know not whether the Cornish Britons carried on any considerable traffic in this commodity, though it be probable that it was at least exchanged for the wines of France. Yet even in the reign of John, the product was so inconsiderable, that the mines were farmed to Jews for 100 marks; but in that of Henry III. they began again to yield a large profit, which has gradually increased[37].

[37] Borlase's Cornwall.

Cornwall,

Cornwall, like most countries that abound with minerals, presents an external aspect of desolation: a series of barren hills, and bleak heaths, pervades its whole length; and the violent winds from the sea check the vegetation of trees and shrubs. The tin mines are numerous, and of various descriptions. This metal is either found in the mass, in what are called *lodes* and *flools*; or in grains, or bunches, in the rocks; or detached in separate stones, called *shodes* or *strings*; or in a course of such stones called the *beuheyl* or *living string;* or in the pulverized shape of sand. After having been pounded in a mill, it is melted into blocks of 320 pounds weight. In the ore it is styled black tin; but is sometimes, though very rarely, found in a metallic state.

The singularity and importance of this first national staple, may apologise for this discussion; but the abundance of the other topics will require more brevity. Wool had been regarded as a grand staple of England, as early as the twelfth century, but was chiefly exported in a crude state, till Edward III. encouraged settlements of Flemish manufacturers. Wool soon became the standard of private property, and the prime article of commerce. Taxes and foreign subsidies were estimated by sacks of this commodity[38]. Great quantities of raw wool continued to be exported to the Netherlands and Hanse Towns; but in the reign of Elizabeth it began to be chiefly manufactured at home, and the exportation of woollen cloths was then valued at a million and a half annually. The exportation of raw wool was at length prohibited; and the woollen manufactures preserve great importance, though they no longer attract such particular regard, amidst the exuberance of English manufactures.

In recent times, the manufactures of iron and copper, native minerals, have become great sources of national wealth; nor must the new and extensive exportation of elegant earthenware be forgotten. The cotton manufacture is diffused far and wide, forming a grand source of industry and prosperity. That of linen is not much cultivated in England, though nature would rather demand that flax should be cultivated in this fertile country, while sheep and wool were restricted to the hilly pastures of Scotland. The manufactures of glass and fine steel, clocks, watches, &c. are deservedly eminent and extensive. As the nation is indebted to Wedgewood for converting clay into gold, so to Boydell for another elegant branch of exportation, that of beautiful prints.

Besides manufactured articles, England exports a number of native products too numerous to be here mentioned.

The English manufactures have been recently estimated at the annual value of 63,600,000*l.* and supposed to employ 1,585,000 persons[39]. Of these the woollen manufacture is supposed to yield in round sums, 15,000,000*l.*; the leather 10,000,000*l.*; the iron, tin, and lead 10,000,000*l.*; the cotton 9,000,000*l.* The other chief manufactures, which yield from 1 to 4,000,000*l.* may be thus arranged, according to their consequence; steel, plating, &c. copper and brass, silk, potteries, linen and flax, hemp, glass, paper.

The commerce of England is, at the present period, enormous, and may be said to extend to every region of the globe. It was conceived that the defection of the American colonies would have proved detrimental in this view; but the commercial consequences have been little important. The trade with the West Indies furnishes another grand resource: and that with the East Indies alone, would have astonished any of the celebrated trading cities of antiquity. The following table will present a more complete view of the subject than could otherwise be conveyed. It relates solely to the port of London for one year, ending 5th of January, 1795, since which the commerce has increased.

[38] Campbell's Political Survey, vol. ii. p. 151, 152. A work opulent in materials, but of most tedious and uncouth execution.

[39] Mr. Grellier, in the Monthly Mag. January 1801.

Names of the Countries.	Value of Imports into London.	Value of Exports from the Port of London, to Foreign Parts. British Manufactures.	Foreign Merchandize.
	£. s. d.	£. s. d.	£. s. d.
Ireland	2,209,501 3 4	168,687 18 3	914,352 4 4
British West Indies	6,072,117 5 0	2,249,043 13 11	579,453 6 0
Conquered Islands	1,226,064 13 8	260,976 0 11	110,817 18 0
British American Colonies	307,412 13 0	654,842 19 3	251,551 6 2
Guernsey and Jersey	91,936 1 2	12,001 13 10	21,616 16 8
Gibraltar	12,947 16 8	83,473 14 11	69,315 2 8
Honduras Bay	14,696 4 2	2,029 18 11	2,550 16 2
South Fishery	197,680 8 6	21 6 8	— — —
Asia, including East Indies	8,916,950 2 10	3,398,680 1 4	185,190 16 6
Africa	66,013 8 4	90,593 12 9	188,743 16 0
Turkey	641,860 19 2	32,065 12 0	123,776 7 2
Streights	8,399 14 0	— — —	— — —
Venice	82,107 16 0	6,203 17 11	16,305 7 2
Italy	1,215,012 15 0	80,980 18 9	340,786 0 8
Spain	1,070,697 19 0	205,096 4 4	265,169 3 4
Portugal	644,610 3 8	182,780 6 2	119,813 12 6
Madeira	7,479 16 8	27,998 6 10	6,886 18 2
Canaries	6,763 19 10	20,116 18 4	377 5 2
France	130 6 8	3,216 5 3	63,625 10 6
Austrian Flanders	137,249 5 0	129,413 9 7	887,642 18 10
Holland	1,203,515 3 6	114,458 3 7	1,968,687 3 4
Germany	1,089,307 19 4	1,044,634 18 0	6,176,100 14 8
Prussia	196,657 3 2	54,380 14 0	272,719 17 4
Poland	104,978 10 4	7,022 11 10	57,067 2 4
Sweden	262,727 3 4	33,845 5 6	111,457 14 4
Russia	1,269,688 9 6	95,519 8 8	491,244 9 2
Denmark and Norway	166,366 1 0	147,340 5 11	545,509 19 8
Greenland	26,753 11 2	— — —	— — —
United States of America	811,511 18 8	2,251,280 12 1	429,248 7 8
Florida	16,239 16 0	38,067 0 3	8,855 0 0
Foreign West Indies	56,240 2 0	1,767 13 10	60 0 0
Prize Goods	1,572,868 8 8		Included in the account of each country.
	29,706,476 17 4	11,396,539 13 8	14,208,925 14 6

RECAPITULATION.

The aggregate value of goods imported into London in one year		£ 29,706,476 17 4
British Manufactures exported	£ 11,396,539 13 8	
Foreign Merchandize, do.	14,208,925 14 6	
		25,605,465 8 2
Value of goods imported in upwards of 9000 coasting vessels, averaged at 500*l.* each.	4,500,000 0 0	
Value of goods exported coastways in about 7000 vessels, at 1000*l.* each.	7,000,000 0 0	
		11,500,000 0 0
Total amount of property shipped and unshipped in the River Thames in the course of the year, estimated at		66,811,942 5 6

If to this estimate be added those of the ports of Liverpool, Bristol, &c. how enormous must be the amount[40].

[40] Colquhoun (or Cohoun) on the Police.

From

From the States of North America, are chiefly imported tobacco, rice, indigo, timber, hemp, flax, iron, pitch, tar, and lumber. From the West Indies, sugar, rum, cotton, coffee, ginger, pepper, guaiacum, sarsaparilla, manchineal, mahogany, gums, &c. From Africa, gold dust, ivory, gums, &c. From the East Indies and China, tea, rice, spices, drugs, colours, silk, cotton, salt-petre, shawls, and other products of the loom. From our remaining settlements in North America, are imported furs, timber, pot-ash, iron; and from the various States of Europe, numerous articles of utility and luxury.

On introducing the Income tax, Mr. Pitt gave the following estimate of the annual income of Great Britain[41].

The land rental, after deducting one-fifth	£20,000,000
The tenant's rental land, deducting two-thirds of the rack-rent	6,000,000
The amount of tythes, deducting one-fifth	4,000,000
The produce of mines, canal navigation, &c. deducting one-fifth	3,000,000
The rental of houses, deducting one-fifth	5,000,000
The profits of professions	2,000,000
The rental of Scotland, taking it at one-eighth of that of England	5,000,000
The income of persons resident in Great Britain, drawn from possessions beyond the seas	5,000,000
The amount of annuities from the public funds, after deducting one-fifth for exemptions and modifications	12,000,000
The profits on the capital employed in our foreign commerce	12,000,000
The profits employed on the capital in domestic trade, and the profits of skill and industry	28,000,000
In all	£102,000,000

By others, the landed property of Great Britain has been computed at the rental of 33,000,000*l.* which, at thirty years' purchase, would yield 990,000,000*l.*; the rental of houses in England and Wales[42], at 7,436,000*l.* and estimating that of Scotland at about a sixth, the value at fifteen years' purchase, might be about 130,000,000*l.* The cattle and farming-stock, about 100,000,000*l.* the furniture, apparel, &c. 26,000,000*l.* The navy and merchant-ships have been valued at 16,000,000*l.*; the goods in the hands of merchants and wholesale dealers, more than 13,000,000*l.* and those in the hands of manufacturers and retail traders, more than 22,000,000*l.* Including the money, of which the estimate is far from certain, the whole capital of Great Britain may be calculated at more than one thousand two hundred millions[43].

In the year 1797, the amount of the exports, according to Custom-house accounts, was 28,917,000*l.* and of the imports, 21,013,000*l.*[44] yielding, as is supposed, clear profits on foreign trade, to the amount of at least 10,000,000*l.* The number of merchant vessels is supposed to amount to 16,000; and it is supposed that 140,000 men and boys are employed in the navigation.

[41] New Annual Register, for 1799, p. 114. [42] Grellier, Month. Mag. Sept. 1800.

[43] In the beginning of the eighteenth century, Gregory King supposed the value of England and Wales to be 650,000,000*l.* MS. Harl. No. 1898. The national debt now approaches 500,000,000*l.*

[44] Mr. Pitt, in 1799, computed the imports at 25, and the exports at more than 33,000,000*l.* In Feb. 1801, the foreign exports at 17, the domestic 20,000,000*l.*; in all, 37,000,000*l.*

CHAP-

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons. — Face of the Country. — Soil and Agriculture. — Rivers. — Lakes. Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Great Britain is perhaps more variable than that of any other country on the globe, as the vapours of the Atlantic Ocean are opposed to the drying winds from the eastern continent. The western coasts in particular, are subject to frequent rains; and the eastern part of Scotland is of a clearer and dryer temperature than that of England. The humidity of the climate, indeed, clothes the delicious vales and meadows with a verdure unknown to any other region; but is injurious to the health of the inhabitants, by causing colds and catarrhs, the frequent sources of more deadly disorders, particularly of consumptions, which are fatal to many in the prime of youth. The moist and foggy climate conspires with the great use of gross animal food, to produce that melancholy, which is esteemed by foreigners a national characteristic. As trees particularly attract the moisture of the atmosphere; it may be questioned whether the noted abundance of them in England, contribute to the general salubrity.

In consequence of the mutability of the climate, the seasons themselves are of uncertain tenour. Aged people have always been given to magnify the advantages of their youth, but many observers, endowed with philosophical skill, and candid judgment, have agreed, that since the year 1775, a considerable change has taken place in the temperature of the year, both in Great Britain and Ireland[1]. The winters in general have been more moist and mild, and the summers more humid and more cold, than will be found on an average of preceding years. The year might more properly be divided into eight months of winter, and four of summer; than into any theoretic arrangement, originating in the southern latitudes. What is called the Spring, dawns in April, commonly, indeed, a mild month; but the eastern winds prevalent in May, seem commissioned to ruin the efforts of reviving nature, and destroy the promise of the year. June, July, August and September, are usually warm summer months; but a night of frost is not unknown, even in August, and sometimes a cold east wind will blow for three days together; nor of late years are summers unknown of almost constant rain[2]. What the gardeners call *blight*, seems also more common in England than in any other region; and whatever be the cause, is frequently very destructive, especially to the hop-plants and the fruit trees. The winter may be said to commence with the beginning of October, at which time domestic fires become necessary; but there is seldom any severe frost till Christmas, and January is the most stern month of the year. Yet as our summers often produce specimens of winter, so now and then

[1] See Memoirs of the Irish Academy, vol. ii.

[2] The summer of 1800 was remarkable for dryness and warmth, scarcely any rain falling from the 6th of June to the 20th of August, when a thunder storm succeeded.

gleams

gleams of warm sunshine illuminate the darker months, though rarely amounting to what the French call *un eté de St. Martin*, or Martinmas summer. March is generally the most unsettled month of the year, interspersed with dry frost, cold rains, and strong winds, with storms of hail and sleet.

FACE OF THE COUNTRY.] A chief step to the study of Geography, consists in the knowledge of what may be termed the physiognomy of the country, yet has no province in this science been so completely neglected. We have even maps of Scotland and Switzerland, without mountains, and maps of China without canals. The chief features of any country are its hills, vales and rivers, and of a maritime state, the sea coast. Mr. Pennant, in his Arctic Zoology, has given an admirable description of part of the English shores, which shall be here abbreviated, with an alteration in the arrangement, as he chooses to begin with the Straits of Dover.

From the mouth of the Tweed to Bamborough, extends a sandy shore; and the most remarkable object is Lindesfarn, or Holy Island, divided from Northumberland by a level, which is dry at low water, but out of which the flowing tide oozes suddenly, to the terror and peril of the unwary traveller. From Bamborough Castle to Flamborough Head, are mostly low cliffs, of limestone, and other materials; and at Sunderland, of a peculiar stone used in building, and which seems the work of marine insects. Scarborough stands on a vast rock, projecting into the waves; but Flamborough Head is a far more magnificent object, being formed of lime-stone, of a snowy whiteness, and stupendous height, visible far off at sea. Grand caverns open on the north side, "giving wide and solemn admission, through most exalted arches, into the body of "the mountain; together with the gradual decline of light; the deep silence of the "place, unless interrupted by the striking of the oar, the collision of a swelling wave "against the sides, or the loud flutter of the pigeons, affrighted from their nests in the "distant roof, afford pleasures of scenery, which such formations as this alone can "yield. These also are wonderfully diversified. In some parts the caverns penetrate "far, and end in darkness; in others are pervious, and give a romantic passage by "another opening, equally superb. Many of the rocks are insulated, of a pyramidal "form, and soar to a great height. The bases of most are solid, but in some "pierced through and arched. All are covered with the dung of the innumerable "flocks of migratory birds, which resort here annually to breed, and fill every little "projection, every hole, which will give them leave to rest[3]."

Hence to the Humber are commonly clay cliffs; and near Spurnhead amber is sometimes found. The extensive coast of Lincolnshire is flat, and, according to Mr. Pennant's opinion, has been gained from the sea; though in some parts the sea has in its turn invaded the land, and the remains of a forest are visible under the waves. The county of Lincoln, and part of six others, are the low countries of Britain; and the coast is distinguishable by churches, not by hills. The shores of Norfolk and Suffolk present sometimes loamy or clayey precipices, sometimes hillocks of sand, and sometimes low and flat spaces. Hunstanton Cliff rises to the height of about eighty feet, composed of chalk and friable stone, resting on a base of what is called iron-coloured pudding-stone[4], projecting into the sea. The coast of Essex is generally low; but to the south of the Thames, arise continued cliffs of chalk, with layers of flint, resembling masonry. The North Foreland is a lofty chalky promontory; and the Cliffs of Dover are known to every reader of Shakespeare.

It is to be regretted that Mr. Pennant did not extend his animated description to the southern and western coasts; cliffs of chalk and clay are interspersed with flat gravel,

[3] Pennant's Arctic Zoology, vol. i. p. 15.
[4] The *farcilite* of Kirwan from the Latin: better from the Greek, *hallite*.

till

till the island of Portland presents its bold rocky front. The western shores abound with granite, and other siliceous rocks, slate, and lime-stone.

Soil and Agriculture.] The soil and agriculture of England are topics which have recently been illustrated in such a multiplicity of meritorious works, that the subject labours under the abundance of the materials. A few very general remarks must here suffice. The soil is greatly diversified, but in general fertile; and in no country is agriculture more thoroughly understood, or pursued in a grander style, except, perhaps, in Flanders and Lombardy. The nobility and gentry, mostly residing upon their estates in summer, often retain considerable farms in their own hands, and practice and encourage every agricultural improvement. The writings of Mr. Young, the Institutions in the West, and the Board of Agriculture, recently erected, have contributed to diffuse a wide and lasting knowledge of this interesting branch. The intermixture of the green crops with those of grain, the use of turnips, the irrigation of meadows, the regular substitution of crops appropriated to the state of the land, the art of draining conducted on scientific principles, may be mentioned among the recent advances of knowledge; nor must the improvements in the breed of sheep and cattle, introduced by Bakewell and others, be forgotten.

Amidst such topics of just exultation, it is mortifying to reflect upon two circumstances, the deficiency of a proper supply of grain, and the immense extent of the waste lands in this industrious country. The cultivated acres in England and Wales are computed at upwards of 39,000,000, while those uncultivated are 7,888,777. Of these it is supposed that not above half a million is wholly unimprovable, and perhaps a million is only fit for plantations, while of the remainder one quarter is fit for tillage, and three-fourths for meadow and upland pasture[5]. Mr. Middleton[6] computes the arable land in South Britain at only 14,000,000 of acres, upon a general view of the consumption of the country, as we import corn proportionate to the produce of 378,000 acres. He supposes the state of crops on each 10,000,000 of acres to be as follows:

Wheat - - -	2,750,000 Acres.
Oats and Beans - -	2,500,000
Barley and Rye - -	750,000
Roots - - - -	1,000,000
Clover - - - -	1,000,000
Fallow - - -	2,000,000
Total	10,000,000

The utility of fallow is a dubious topic; and the million in clover may be arranged as pasturage which otherwise occupies not less than 21,000,000 of acres, while 2,000,000 are assigned to woods, copses, and hedge-rows[7]; and more than 1,500,000 are unavoidably consumed in roads, rivers, and waters, &c. The subject can only be well discussed by the most competent judges; but it may be cursorily observed, that as the radical error of French agriculture was an excess of land under grain, whence there was a deficiency of pasture, of cattle, and consequently of manure, so that the arable ground was starved; so in England there may, perhaps, be an excess of pasturage. Whatever be the causes, a growing population, certainly increasing luxury and waste, the neglect of the waste lands, or other sources, the consumption of grain in this country, has, it is believed, since the middle of the last century, particularly since 1767, generally exceeded the produce; and the evil has gradually increased to an alarming extent. On an average of eleven years, closing with 1793, the annual deficiency amounted to 587,163 quarters of grain[8]; nay, in 1795, the scarcity demanded a still

[5] First Report of the Committee of the House of Commons, p. 22.
[6] View of Middlesex, p. 484. [7] Ib. 486. [8] Ib. 481.

further supply of 1,177,000 quarters: which also, divided by 11, will produce the whole annual defect of 694,163 quarters. Computing produce at three quarters an acre, the land required, exclusive of the seed, would be 231,388 acres cropped with corn; while about half as much must be added for fallow and the rotation of crops. For an abundant supply 500,000 of acres might be requisite, which might seemingly be assumed with little difficulty from at least 1,500,000 waste acres in South Britain, which are fit for tillage. Yet this calculation would infer that the deficiency does not exceed the twenty-eighth part of the whole, which seems too small, as the bread has been doubled in price; and, indeed, these theoretic views can never pretend to much exactness[9]. If South Britain annually produce 11,500,000 quarters of wheat, the deficiency can hardly be supposed less than a tenth part. Scarcity, indeed, multiplies the consumption, as the poor are reduced to the use of bread only; but still the rise in the price of that article appears to exceed any fair calculation.

Horticulture, or the art of gardening, is also pursued in England with great assiduity and success. The large supply of the capital in vegetables and fruits, and the high prices given for early produce, occasion such a spirit of cultivation, that each acre thus employed, is supposed to yield about 120*l.* annually, the consumption in the metropolis being computed at more than 1,000,000*l.* annually. While Mr. Middleton computes the hop-grounds in South Britain at 44,000 acres, he allows 10,000 for nursery grounds, 50,000 for fruit and kitchen gardens, and 20,000 for pleasure-grounds, that is the unprofitable parts of the latter, the rest being pastured for cattle, or mown for hay. Of ornamental gardens, laid out with a just attention to the beauties of nature, and free from the uncouth affectations of art, England is deservedly regarded as the parent country[10]. The first idea has been referred to Milton's description of Eden; and a paper in the Guardian is supposed to have induced Bridgman, a fashionable designer of gardens, to begin this reform, which was successfully followed by Kent, while the Duke of Argyle introduced the various foliage of exotic trees. One of Kent's best works was the garden at Rousham, while Claremont, Esher, and other places, also proclaim the extent of his powers. The new designs were seconded by several gentlemen of taste; and Kent was followed by Brown, who has been succeeded by Repton, and other masters of great abilities. In the course of little more than half a century, this taste has not only been diffused in Great Britain, but has been imitated in several favourite spots on the Continent, even as far as the rude climate of Russia.

RIVERS.] But the rivers and mountains of a country constitute its most important features; and without just delineations of them, the geographical portrait cannot boast much truth or resemblance. England is intersected by four important rivers, the Severn, the Thames, the Humber, and the Mersey. The Severn rises from the mountain Plinlimmon, and after an easterly course to Shrewsbury, bends its progress almost south to Gloucester, whence it flows south-west into the Bristol Channel, a progress of about 150 miles, navigable as far as Welch-pool. Its chief tributary streams are the Northern and Southern Avons, the Teme and the Wye[11].

THAMES.] The Thames originates in Cotswold-hills, Gloucestershire; and maintains a south-easterly direction, to its egress into the German Ocean, after receiving the Cherwel, the Teme, the Kennett, another Wye, the Mole, and Lee. The Medway flows into the estuary of the Thames, as the Wye into that of the Severn. The course is computed at 140 miles, navigable to Cricklade[12].

HUMBER.] The Humber is a name almost confined to a large estuary, which receives many considerable rivers that fertilize the central parts of England. Of these

[9] There is to be allowed for not only the simple increase of price consequent upon the deficient quantity, but also the increase of consumption of bread among the poor, produced by the high price of other articles of food. B. [10] Lord Orford on Modern Gardening. [11] Campbell, I. 146. [12] Ibid. I. 139.

the Trent is the most important, which rises at New-pool, in Staffordshire, and proceeding north-east, enters the Humber, after a direct course of about 100 miles, being navigable to Burton in Staffordshire. The other principal rivers that issue into the Humber, are the Dun, a navigable stream which runs by Doncaster; the Aire navigable to Leeds, and the Calder navigable to Halifax, both singularly useful in transporting the woollen manufactures; the Warf, navigable to Tadcaster; and the noble river Ure, or Ouse, which runs by York, and forms another grand branch of the Humber, navigable to Rippon: nor must the Derwent be omitted, which is navigable to New Malton; nor, though last and least, the Hull. The Humber may be regarded as the stem of a venerable oak, which, as usual with that tree, spreads its chief branches in a horizontal direction.

MERSEY.] Though the Mersey presents a grand estuary, its course is not of great extent. It arises in the West Riding of Yorkshire, and runs to the south-west; but the estuary bends towards the north. The direct course is not above 50 miles; and is navigable to Stockport: as the Irwell to near Manchester, and the Weever to near Northwich, and the mines of rock-salt.

In briefly describing the other navigable rivers of this kingdom, it may be proper to return to the Severn, and proceeding south-west, pursue the outline of the coast. The Avon is navigable to Bath, the Perrot to Ilchester, the Tone to Taunton, the Taw to Barnstaple, and another branch to Bideford; the Camil of Cornwall, to Wedbridge, while the Plym, Dart, and Ex, can also be pervaded to a considerable height. Another Avon is navigable to near Salisbury, the Itchyn to Winchester, the Arun to Arundel, the Ouse to Lewes; the Rother, which forms the haven of Rye, is yet navigable, though fallen in fame. The Stour admits boats even to Canterbury; but the Medway presents a navigable stream as far as Tunbridge. On the north of the Thames, the Lee is navigable to Bishop's Stortford and Hertford: the Crouch conveys boats from the sea to Hull-bridge in Essex; the Blackwater to Chelmsford, and another branch to Colchester. The Stour is navigable to Sudbury; the Orwell to Stow, the Deben to Woodbridge; the Yare and Waveney present access to Foulsham and Bungay. Next is the estuary called the Wash, which receives the Ouse, the Nen, the Welland, the Witham, all streams of considerable navigation.

On the north of the Humber, the Tees admits vessels to Stockton; the Tyne to Newcastle. On the west, the Eden is navigable to Carlisle; the Lon to Lancaster and Hornby; the Dee to Chester; the Conway to within two miles of Llanrwst; the Tivey a little above the town of Cardigan. Milford Haven presents branches navigable to Haverford-west, and to near Wiston; the Towey above Carmarthen: and lastly, the Wye may be pursued as far as Hay, in Brecknockshire.

In general it may be observed of the British rivers, that the length of their course is inconsiderable, when compared with that of the Continental streams. The length of the Thames compared with that of the Danube, is only as 1 to 7, and with that of the Nile, as 1 to 12. The Kian Ku of China, and the river of Amazons in South America, extend through a progress of more than fifteen times the length of that of the Thames. The rivers of the southern and middle parts of England present a striking contrast to those of the north; the former pursuing a slow and inert course over mud, between level banks, amid rich and extensive meadows; while the latter roll their clear torrents over beds of gravel, between elevated banks, and rocky precipices; and even when verdant levels occur, the stream still retains its banks and beds of gravel.

MOUNTAINS.] The mountains form another grand feature of geography. They seldom appear single, but are either disposed in lines or ridges, called chains, or in anomalous clusters. When they can be arranged under the first form or denomination, as the Alps for example, or the Pyrenees, they afford great clearness to geographical limits and descriptions. It is not, however, to be conceived, that a chain of mountains

forms one series, as delineated in small maps, for the leading summits diverge on both sides into extensive ribs, gradually melting into the champaign country. And the clusters, if accurately surveyed, will generally be found to present central elevations, whence smaller branches irradiate.

While Bennevis, the highest mountain in Scotland, is not much above one quarter of the height of Mont Blanc, the sovereign of the Alps, the English and Welsh summits aspire to heights still less considerable; Snowden being only 3568 English feet above the sea, while Bennevis is 4387, or by other accounts, 4350. But Wharn, or Wharnside, in Yorkshire, was estimated at 4050[12].

Even at the present day, the geography of some parts of New Holland is better understood than that of some parts of Great Britain. There is not even a separate map of the English rivers, though France set an example of this kind, a century and a half ago; nor has there been any attempt to delineate the chains of mountains in England. The imperfection of the materials must therefore apologize for any errors or defects in the subsequent slight sketch. The mountains of Cheviot may be said to form a regular ridge, running from the south-west, where they join those of Galloway to the north-east. But there is a central ridge which pervades England from north to south, begin-

[12] In the map of the West Riding, in Cary's English Atlas, Wharn is said to be 1780 yards, or 5340 feet; while Ingleborough is 1760 yards, or 5280 feet; and Pennigant 1740 yards, or 5220 feet. This measurement is from the map of Yorkshire, by Jeffries.

Mr. Housman in his description of Cumberland, &c. (Carlisle, 1800, 8vo.) is the most recent authority for the height of the British mountains, which he exhibits in the following table:—

"Heights of the Mountains above the Level of the Sea.	Feet.
Snowden in Wales, by Waddington - - - -	3456
Whernside Do. - - - -	4050
Pendle hill Do. - - - -	3411
Pennygent Do. - - - -	3930
Ingleborough Do. - - - -	3987
Helwellyn, by Donald - - - - -	3324
Skiddaw, Do. - - - - -	3270
Cross fell, Do. - - - - -	3390
Sadd eback, Do. - - - - -	3048
Benlomond - - - - - -	3240
Benevish - - - - - -	4350
Ben-y-bourd higher, Laghin-y-gair, Benwewish } By Pennant. Perpetual snow.	
Skiddaw, by the experiments of Mr. Walker, from the plane of the sea, at Whitehaven - - - -	3530
Cross-fell, by Pennant - - - - -	3839"

But great skill and precision are required in measuring the heights of mountains. A late excellent mathematician, Mr. Ewart, of Lancaster, measured the height of Ingleborough, with select and high-priced instruments, and great care. Here is the result, as communicated to me by Dr. Garnett:

Height of Ingleborough above the level of the sea, in feet and decimals.

By barometrical admeasurement - - -	2377.12
By trigonometrical - - - -	2380.7
Difference only -	3.67

Wharn cannot be above 100 feet higher, while Pendle and Pennigant are lower. The measurements by Donald are probably near the truth; Crossfell being, in Dr. Garnett's opinion, the highest mountain in England.

Mr. Housman has, however, given a good general view of the English mountains. On coming from the south (p. 5.) they begin in Derbyshire, stretching a little into Cheshire. The tops of the ridges are commonly wet and boggy, and produce heath, bent-grass, and rushes. They are almost universally calcareous. Near Penrith (p. 8.) they almost wholly disappear. The summit of Crossfell (p. 18.) is scarcely 1000 yards above the sea, and presents a large heap of loose whitish free-stone, or, more probably, argillaceous grit.

ning at Geltsdale forest, 14 miles south-east of Carlisle *, and passing on the west of Durham and Yorkshire, where it contains mines of coal and lead, but is split into insignificant appellations of *fells* and *laws*. Kelton-fell, Stanmore, Widehill-fell, Wildboar-fell, Bow-fell, Home-fell, Bun-hill, &c. &c. arise on the western limits of Yorkshire. Cumberland and Westmoreland present many detached mountains, Skiddaw, &c. which can hardly be reduced to any distinct arrangement; but those of Craven, in the West Riding of Yorkshire, as Wharn, or as commonly called by the country people, Wharnside, Ingleborough, and Pennigant; and Pendle on the east of Lancaster †; belong to the central chain, which proceeds south, through Derbyshire, still abounding with minerals and natural curiosities; but here it seems to terminate, spreading a little into Cheshire. Still, however, a central chain of smaller elevation, may be traced in a zig-zag line to near Salisbury, with two diverging and irregular branches on the east, one towards Norfolk, another into Kent, while a third runs south-west into Cornwall. To the first belong the hills of Gogmagog, in Cambridgeshire, &c. to the second the hills of Hampshire, Surrey, and Kent. Malvern hills, in Worcestershire, deviate from the central ridge, while those of Cotswold, in Gloucestershire, may be regarded as a continuation of it. The hills of Mendip, Polden, Sedgemoor, Blackdown, in Somersetshire; the Tores and Wilds of Dartmore, in Devon; and the hills and upland downs of Cornwall, extend this chain to the Land's End: and after passing this last rocky province, it expires in the Islands of Scilly ‡.

Snowdon.] Wales is a country abundant in mountains, especially the northern provinces; but their orology remains indeterminate, and it would require the actual survey of an experienced engineer to reduce them to chains and groupes. To begin with the north, Snowdon commands the first attention, a mountain of eminent height and fame. The top is called Y Widdfa, or the conspicuous, forming almost a point, and presenting a view of the county of Chester, the mountains of Yorkshire, part of Scotland and Ireland, and the Isles of Man and Anglesey [13].

Mr. Pennant does not specify the stone that composes it (probably a granite); but he observes that "large coarse crystals are often found in the fissures, and very frequently cubic pyritæ, the usual attendants on Alpine tracts." Mr. Aikin in his last tour brought specimens from the summit, consisting of schistose petrosilex mixed with a little steatite which supports argillaceous schistus. The petrosilex is in strata nearly vertical; the argillaceous schistus in beds nearly horizontal. From Snowdon, a line of mountains extends by the sea to Plinlimmon, a boundary of North Wales, whence issue the noble rivers Severn and Wye. Of these hills, Cader Idris, and Moele Vadiau, are the most memorable. The hills on the east of North Wales are far from attaining such considerable elevation, and gradually decline to the hills of Shropshire, of which the Wrekin is one of the most noted §.

* The heathy tract extends to Bewcastle and Nichol Forest, but is level. Housm. 427.

† That Ingleborow-hill, Pendle, and Pennigent,
Should named be the highest betwixt our Tweed and Trent.
Drayton's Poly-Olbion, Song 28.

It is remarkable that Wharn, the highest, is omitted. Bafell, or Bowfell, in the West Riding of Yorkshire, is said to equal Skiddaw in height, and the base is not less than 30 miles in circuit. It affords a quarry of marble much used at Liverpool, and other cities in the West of England. It is truly surprising that no tolerable account has yet been published of the English mountains.

‡ Among the smaller elevations may be named the Chiltern-hills, (whence the vague office of Steward of the Chiltern Hundreds) reaching from Tring in Hertfordshire, to Henley, in Oxfordshire. In the latter county are Nettlebed and Shotover-hills.

[13] Pennant's Journey to London, p. 170.

§ Mr. Aikin, in his Tower in Wales, has considerably illustrated this subject. He observes, (p. 19.) that the Ferwyn mountains occupy the east side of Merioneth, branching into Denbigh and Montgomery;

A chain

A chain proceeds due south to near Cardiff, in South Wales; it is of far inferior height, and a small branch diverges to the west, consisting of Cwm Cothy, Mynydd, Carreg, Brisley, and Cwm Kerrun hills. On the east of South Wales are the hills of Herefordshire, the Black Mountain, Cusop-hill, Hargest, Stockley-hill, &c.

In the Northern and Western mountains and hills, chalk is unknown, while it forms a chief material of those of the South and East. An eminent naturalist observes, that a line drawn from Dorchester, in the county of Dorset, to the county of Norfolk, would form a boundary of the great chalky stratum which intersects the kingdom, none being found in any quantity to the north or west of that line[14]. The northern mountains are mostly composed of lime-stone, free-stone, slate, or schistus, with mines of lead or coal; those of Derbyshire present vast mines of lime-stone, intersected with thick veins of toad-stone, by some asserted to be the produce of fire, while others assign an aqueous origin*, and numerous fossils and minerals, the consideration of which is reserved for a future article. The summit of Skiddaw presents white shivery slate, or argillaceous schistus; but some of the Westmoreland mountains contain siliceous schistus †; and it is probable that granite may exist in those of Cheviot. The vast base of Ingleborough, near 30 miles in circuit, consists of lime-stone; on the east side full of shells to near the summit, which is of grit and sand-stone flag; the fossils, black and brown marble, thin slate near Ingleton, rotten-stone or tripoli, and some lead-ore[15]. And such is this chain to its termination; while further to the south, the easterly elevations are of chalk; and those on the west, as Mendip hills, in Somersetshire, are wholly calcareous. The granite begins at Dartmoor, in Devonshire, and continues through Cornwall, where it occurs of various colours, the grey granite, or moorstone, the red, or Oriental; the white, the yellow, and the bluish, or pigeon-coloured[16]. Near the Lizard and Mullion, are rocks of serpentine and steatites, the latter being also found in a singular variolite, at Thorverton, between Exeter and Upton Pyne. The china-stone, or petunsi, used in making fine porcelain, is here a decomposed granite, the felspar having become soft like lithomarga.

The Welch mountains abound in various granites, with large masses of quartz and serpentine: a French traveller[17] observes a similarity between the substances of the Welch mountains, and those of Wicklow in Ireland, whence he infers a primitive junction. While on the east of England the lime-stone succeeds the chalk (of which change the noble promontory of Flamborough-head, already described, affords a striking instance,) on the coast towards Wales, are found granite, and other primitive

length about 16 miles, breadth from five to ten. Cader Idris is the second in height of the Welch mountains, (about 3000 feet) and from it extends a primitive chain, running N. N. E. in the Arrans and Arranigs, consisting of porphyry and granitell. The second grand ridge, that of Snowdon, also runs N. N. E. and consists of schistose hornblende, micaceous schistis, granite, and porphyry, with some large blocks of serpentine: this chain extends from Penmaenmawr, towards Traethmawr; and after forming conic peaks at intervals, it ends in the northern horn of Cardigan-bay, that is the southern promontory of Caernarvonshire.

May not the mountains of Westmoreland and Cumberland be considered as elongations of these two chains, that of Snowdon passing fvom the promontory on the west of the bay of Lancaster, by Helvellyn, and ending in Saddleback and Skiddaw; while the other passes from near the river Ken, by Shap Fell, &c.?

[14] Pennant's Journey from Chester to London, p. 214.

* This toad-stone is by the miners called *cat dirt*, but they unluckily apply the same name to a very differeat substance, (a greenish lime-stone); a circumstance which has deceived Faujas, when he asserts that lead ore is found in the toad-stone, which is never the case.

† Called by Housman (p. 49.) hard grey flint. Fine blue slate abounds in Borrowdale. Ib. He says, (p. 229.) that near to the summit of Wharn, there is a thin seam of coal, and another is said to correspond with it on a hill on the opposite side of Dentdale.

[15] Guide to the Lakes, 265, 267. [16] Pryce's Mineralogy of Cornwal. Maton's Western Tour, &c.

[17] Coquebert Journ. des Mines.

rocks.

rocks. The Wrekin, about ten miles east of Shrewsbury, is chiefly composed of reddish chert, or petrosilex, with siliceous sand-stone, basalt, and a kind of granite[18]. The great coal district of Colebrook-dale, rests on indurated clay, while that near Bristol is accompanied by black freestone, and even the calcareous freestone near Bath is interspersed with numerous veins of coal. The Malvern-hills on the S. W. of Worcestershire, run N. and S. about ten miles, and afford many granitic rocks with chert and hornblende slate[19]. These few notices must suffice on the composition of the English mountains, a subject which only begins to attract the attention which its curiosity deserves.

Forests.] To the reader of poetry, the word *forest* conveys the idea of a region replete with thick and tall woods, interspersed with romantic lawns and murmuring rivulets. But in England a forest is sometimes bare of trees, or not unfrequently only presents a few withered oaks; and the term is even applied to upland downs and heaths. Many of the forests were, even in the Anglo-Saxon times, esteemed Royal demesnes; but the Norman monarchs were so much addicted to the chace, that upwards of sixty forests at one time, appertained to the crown; of which the chief now remaining are the forests of Dean, in Gloucestershire; Sherwood, in Nottinghamshire; Windsor, in Berkshire; and the New Forest, in Hampshire. The royal forests constituting so large a part of the kingdom, of a distinct nature, and regulations different from other regions, many grievances arose, till the Barons exacted from Henry III. the forest charter; in which several despotic laws were revoked, and more equity extended to the neighbouring proprietors and tenants.

Besides the principal forests above mentioned, other districts still retain the name, as Dartmoor-forest, in Devonshire; Enfield-chase, in Middlesex; Witham, and Epping-forest, and that of Henault, in Essex; Sacy and Wittleborough-forest, and Rockingham-forest, in Northamptonshire; Peak-forest, in Derbyshire; Malvern-chase and Wyre-forest, in Worcestershire; Cannock-chase, and Neidwood-forest, in Staffordshire; Mogg-forest, and Clun-forest, and that of Hays and Mocktree, in Shropshire; Macclesfield-forest, in Cheshire; Netherdale-forest, and Langster-chase, in the West Riding of Yorkshire; the forest of Galtres, and Arkengarth and Stainmore, and Leyne, in the North Riding; Teesdale and Weredale forests, in the county of Durham; Rosendale-forest, in Lancashire; Sleddell and Martindale-forests, &c. in Westmoreland; Geltsdale and Inglewood-forests, in Cumberland.

General Sketch of British Botany.] Among the numerous species of vegetables which are natives of Britain, scarcely any are adequate to the sustenance and clothing of man. Our frequent rains, our blasting winds, and the scanty portion to which we are stinted of the light and heat of the sun, deprive us entirely of those vegetable treasures, which, in the tropical climates, offer themselves in overflowing exuberance, to satisfy the wants and luxurious desires of their human inhabitants. The never-failing verdure of our plains and hills, covered with a rich carpet of grasses and papilionaceous plants, shews how admirably our country is qualified for the support of graminivorous quadrupeds; and we find accordingly that our ancient forests abounded in stags and roe-deer, as our cleared and cultivated lands do now with sheep and cattle. This seeming partiality of nature, in thus scanting to man the supply of vegetable food, while it is profusely offered to the grazing herds of every kind, by obliging the early settlers in this island to depend for their support principally on the flesh of animals, gave them stronger motives to personal exertion, than an equal state of civilization in a warmer climate, could have afforded. While the native of the tropical regions was receiving from the unpurchased bounty of nature, his regular and plentiful supply of

[18] Townson's Tracts, p. 163. [19] Ibid. 216.

cocoa-

cocoa-nuts, bananas, and bread-fruit, the Briton was obliged to earn his daily food, by the hard labour of each day, to chase the flying deer through the woods, or to dispute his prey with the boar or the wolf. Thus, by the severity of the climate, and the want of vegetable food, was the first germ of exertion ripened into an activity, which, by the combined influence of luxury and necessity, has at length laid all the vegetable riches of the globe at our feet.

In the general progression of science, botany has advanced with rapid steps, and has been cherished with peculiar fondness in our native island. The Flora of Britain, though it cannot boast the most splendid and exquisite of vegetable productions, yet contains as great a variety of genera and species, as any other country of equal extent. The investigation of indigenous, as well as exotic plants, is continually carrying on here with increasing ardour, and every year brings new accessions to our crowded ranks of native vegetables. It cannot be expected, therefore, that we should give a particular account of each species, and it would be but little agreeable or useful, to offer to our readers a barren list of Linnæan nomenclature: we shall, therefore, chuse a middle course, by giving a general view of the natural families under which the plants of England arrange themselves, and particularise by name only, such species, as from their utility or rarity, or other circumstances, may be worthy of individual notice*.

GRASSES.] The first for importance and variety is the family of GRASSES. Almost every part of the country that is not under tillage, is principally covered with grass. Under almost all the differences of soil and situation, we find the chief covering of the richest, as well as of the most barren tracts, made up for the most part of these plants; to these we are indebted for the luxuriant verdure of our pastures, for the close velvet carpeting of our downs and sheep-walks, and the more scanty clothing of our mountainous districts. Twenty-seven genera, and a hundred and ten species of grass are natives of our island, most of them of common occurrence in situations where they are found at all. None of them have been proved to be poisonous, either to man or beast; on the contrary, whether fresh or dried, they furnish a grateful food to all our domestic cattle. Those which are found in meadows and pastures are esteemed the sweetest and most nutritious; but those that are natives of marshes and wet places are generally the largest and most luxuriant, and if in quality they be somewhat inferior to the preceding, yet the defect is probably more than compensated by the quantity of herbage that they supply. Light sandy soils, especially the flat parts of the eastern and southern coasts, abound in grasses that are hardly to be met with in the interior of the island; the herbage of these affords a coarse and scanty pasture, and they are eminently distinguished from their kindred species, by the length and strength of their creeping-roots. The inhabitants of Skey, and the other western islands of Scotland, manufacture them into durable ropes: and while growing, they serve the very important purpose of binding together the loose sand, which otherwise would be drifted far up the country. Upon the sides and summits of our mountains, are found a few grasses that do not appear elsewhere, mixed with some others of more general occurrence; as, however, in these bleak and elevated situations, covered with snow for some months in the year, and shrowded in clouds for the principal part of the remainder, it would be scarcely possible for these plants to bring their seeds to maturity, we observe in them a wise and striking deviation from the common course of nature. Like the rest of their tribe, they throw up flowering stems and bear blossoms; but these are succeeded not by seeds, but by bulbs, which in a short time vegetate, and are already furnished with a leaf and roots, before they fall to the ground.

Nearly allied to the grasses in general habit, are eight genera, comprehending about ninety species, which are natives of moors, bogs, and pools; they serve to give consistency

* Smith's Flora Britannica.

sistency to the deep mud or peat, in which they are rooted, and when young afford a coarse pasture to sheep and cattle; several of them also are used for matting, thatching, and for chair bottoms. The stately bull-rush is one of the principal ornaments of our fens, and neglected pools, and the several species of cotton-grass enliven many a dreary mile of bog, by their gracefully pendant tuft of down.

PAPILIONACEOUS.] The Leguminous, or papilionaceous plants, so called from their winged blossoms, form a very important class in British botany. They are divided into nineteen genera, and sixty-four species. The herbage of all when fresh, and of many when dry, is a most grateful food to horses, cattle, and sheep, and several of them, as the clovers and vetches, are largely cultivated for this purpose. Most of this class are climbers, and adorn our thickets and hedges with elegant festoons of blossoms and foliage; and a few have been domesticated in our gardens and shrubberies. Almost all the English papilionaceous plants flourish best in light calcareous soils, either rocky or sandy; and some of them as the Anthyllis vulneraria, and Saintfoin, may be reckoned certain indications of chalk or lime-stone.

UMBELLIFEROUS.] The umbelliferous plants form a large and important class in the natural arrangement of British vegetables, consisting of thirty-five genera, and about sixty spceies. The roots and seeds of those kinds which grow on dry, light soils, are frequently aromatic; those that are natives of marshes and moist meadows, are, for the most part, in a greater or less degree, poisonous. The whole class, indeed, is a suspicious one, and contains species that are fatal, not only to man, but to most of our domestic quadrupeds. The most actively deleterious are the following: Conium maculatum (hemlock); Oenanthe crocata (hemlock drop-wort); Cicuta Virosa (water hemlock). A few species by dint of cultivation, have been rendered serviceable to man, either as food, or on account of their aromatic qualities, and some, as Caucalis daucoides, and Anethum fœniculum, are certain proofs of a calcareous soil.

LABIATED.] The ringent, galeated, hooded, or labiated plants, hold a conspicuous place in the English Flora: of these, none, except perhaps the Digitalis (foxglove), deserve to be ranked among the poisonous plants; a considerable number, however, exhibit a strong aromatic smell, approaching, in some cases, to the fœtid, and possess other active sensible properties. Such are spear-mint, pepper-mint, penny-royal, and hore-hound. Our most esteemed pot-herbs belong to this natural class, and are many of them natives of England. These are (besides the mints mentioned above) marjoram, common and lemon thyme, and basil thyme, all of them abundant in chalky and calcareous soils. There are not many very showy plants in this class; but the bee nettle; two or three species of Antirrhinum (snap-dragon); and the foxglove, both purple and white, are eminently beautiful. Some of the vegetables in this class have certain peculiarities of structure, which render them worthy of notice. The genus Utricularia, an aquatic, may be distinguished all from the rest, by the numerous small membranous bags, attached to its finely divided leaves, that serve to support it on the surface of the water; the genera, Lathræa (tooth-wort), and Orobanche (broom-rape), are parasitical, that is, they fix themselves in the roots of other vegetables, from which they derive their nutriment, being incapable of subsisting if planted in the open ground; they are also destitute of leaves, consisting merely of a fleshy stem, terminated by purplish brown flowers.

LILIACEOUS.] Perhaps the most splendid of all the herbaceous plants, are those with bulbous roots, which, from their general resemblance to the lily, have obtained the name of Liliaceous; most of these, however, are natives of warmer climates; the sandy desarts about the Cape of Good Hope, and the shores of the Indian Ocean, produce the most beautiful species; of those which are found wild in England, there are only eleven genera, and twenty-eight species; and the greater number of these are

of

of rare occurrence in a truly native state; the spring and autumnal crocus, the snow-drop, the snow-flake, the three kinds of Narcissus (including the daffodil), the fritillary, tulip, and lily of the valley, as well as three species of ornithogalum, or star of Bethlehem, are more familiar to us as garden plants, than as natives of our woods and pastures.

Rosaceous.] The British Rosaceous plants, comprising the class Icosandria of Linnæus, include twelve genera, and forty-one species. Some of these are herbaceous, and others are deciduous trees and shrubs. In the first division, the most worthy of notice are, Spiræa ulmaria (meadow-sweet); growing plentifully by the side of brooks and ditches, and scenting the air about Midsummer, with its powerful cloying sweets; Fragaria vesca (wood-strawberry), perhaps the most valuable of our native fruits. Tormentilla officinalis (common tormentil), one of the strongest vegetable astringents. To the second division belong the most beautiful and useful of our hedge-shrubs, the bullace and black-thorn, hawthorn, crab, and mountain ash; several species of wild rose and bramble. The cherry, the medlar, the service, and pear-trees, whose fruit, when wild, is of so little account, and of such value when improved by cultivation, belong also to this class. The burnet-rose, and white beam tree, are certain indications of calcareous soil; and, indeed, almost the whole class thrive best on limestone.

Cruciform.] The Tetradynamious, or cruciform plants, compose a large natural class, entirely distinct from any other, the individual species, however, of which, have so many common features of resemblance, as to render it, in several cases, by no means easy to ascertain their specific differences. The taste of all these is more or less acrid, but none are poisonous: they are found to be peculiarly grateful to sailors who have been long at sea, and thereby have contracted the scurvy; on this account these vegetables have obtained the name of antiscorbutics; their hot biting flavour is the most intense in wet seasons, and in a swampy soil, and is remarkably mitigated by cultivation in light sandy ground. Twenty-three genera, and sixty-two species, are natives of Britain. The most worthy of notice are the several kinds of Lepidium, or pepper-wort; of Cochlearia, including the scurvy-grass and horse-raddish; of Brassica, containing the colewort, field-cabbage, coleseed, and turnip; of Sinapis, including the white and common mustard; sea-kale, and water-cress; all these are wholesome and agreeable vegetables, either in sallads or boiled. Woad is worthy of mention, as a dyeing drug, anciently used by the Britons for the purpose of staining their skins, and in some estimation even at present, as a substitute for indigo. The only native cruciform plant adopted into our gardens, is Cheiranthus cheiri (wall-flower); if, indeed, it be not rather to be considered as of foreign origin.

Radiated.] One of the largest of the natural classes of English vegetables, is that of the radiated or compound flower plants. Forty genera, and 120 species, belong to this class. It is rather remarkable, that out of so large a number of plants, many of which are very abundant, and of great size, only a single one, the Tragopogon porrifolius (salsify), should be applied to the sustenance of man, and not even a single one should be cultivated for the use of cattle; more especially as the Lactuca viroso (strong-scented lettuce), is the only species possessed of deleterious properties. Most of them have an ungrateful bitter taste, and the succulent ones contain a white milky juice, of an acrid flavour. Of all our native vegetables, they are the commonest, thriving by neglect, and multiplying under persecution; the farmer and gardener are unceasingly employed in their destruction, for they contribute little or nothing to the support of man, and the larger quadrupeds; nor is the beauty of their appearance such as to obtain for them a place in the flower-garden. The annual kinds, however, producing vast multitudes of seeds, and the perennial ones being furnished with long

and deeply striking roots, there is no fear of their extermination; they occupy road sides, ditch banks, and all waste places that are incapable of cultivation, and seem peculiarly devoted to the sustenance of the granivorous birds, by their seeds, and of numerous tribes of insects, by their foliage. The sow-thistle, hawkweed, burdock, thistle, coltsfoot, groundsel, dandelion, and daisy, are the most commonly occurring genera; a few, as the chamomile, worm-wood, and elecampane, are employed in medicine. The daisy, and butter-bur (Tussilago petasites), are generally the first blossoms of the spring, and on that account are beheld with greater satisfaction than more showy plants.

Orchis.] The British genera of the Orchis tribe are five in number, and comprehend between thirty and forty species. They are all either singular or beautiful plants, and would no doubt be more frequently introduced into our gardens, if they were of easier cultivation. They are of but little account as food for cattle, but the roots of the bulbous kinds abound in a mild farina, which might be used for human nutriment; the saloop of the shops is the powdered root of a species of orchis that is found in Turkey. The Ophrys anthropophora (man orchis); Ophrys myodes (fly orchis); Ophrys apifera (bee orchis); Ophrys aranifera (spider orchis), are the most singular for the form of their blossom, the general appearance of which is expressed by their trivial names. A few are remarkably fragrant, especially in the cool of evening; these are Orchis bifolia (butterfly orchis); Orchis conopsea; Ophrys monorchis (musk orchis). Several grow in wet boggy places, but by far the greater part are inhabitants of calcareous districts; the county of Kent in particular, is remarkably rich in them.

Trees.] Such of our trees and shrubs as have not been already mentioned, may be considered as forming a peculiar class, and one of great importance; it is naturally subdivided into the evergreen and deciduous.

Evergreens.] The most valuable of our native evergreens, are the box, the pine, the yew, and the holly; those of secondary consequence, are the juniper, the ivy, the cranberry, and those extremely ornamental plants, the Vaccinium vitis idæa (red whortle berries); and Arbutus uva ursi (bear-berry).

Deciduous.] The deciduous timber-trees that are either aboriginal, or at least have been long naturalized to our soil, are the oak, the chesnut, and beech, all of which are *mast-bearing trees*, or produce farinaceous oily nuts, the favourite food of hogs, and of many graminivorous quadrupeds; the birch, the alder, the hornbeam, the abele, the black poplar, and the aspen, bearing catkins; the sycamore, the maple, and the ash; the lime, the elm, and wych hazle. A middle station between the timber-trees, and shrubs, is occupied by the hazle, and the numerous species of willow. The pulpy fruit-bearing shrubs are, the currant, and gooseberry, the elder, the barberry, the cornel, or dogwood, the buckthorn, the guelder-rose, and mealy-tree, and the Mezereon; the four first are wholesome and grateful to the palate, the rest are either insipid or noxious. The four kinds of heath are low, shrubby plants, that form the most splendid ornaments of our bogs or moors.

Ferns.] The ferns comprise a number of elegant plants that grow in moist, shady, and uncultivated places, the uses of which have been but little enquired into; eleven genera, and about forty-four species, are natives of Britain; the roots of most abound in a mild sweetish mucilage, which in times of scarcity has been resorted to for nutriment; the larger and commonest kinds, such as common fern or brakes, are collected and burnt for the potash, which is yielded from their ashes; the stem of the Equisetum hyemale (shave-grass), is much used by turners and cabinet-makers, as a fine file to smooth their work with.

Mosses.] The smallest of vegetables, the mosses, are at the same time the most numerous;

numerous; ten genera, and nearly 200 species are found in the British islands. To man and the larger animals, they appear to be of little or no use; low and shady places are in general over-run with them, and on walls, and hard dry banks, where other plants are unable to vegetate, these readily gain a settlement; by the decay of successive generations, a sufficient depth of soil is at length formed for the nutriment of other vegetables, and this is, perhaps, the principal advantage derived, at least by man, from the existence of these plants.

LICHENS.] Those crustaceous, and leather-like plants, which cover the sides of walls and rocks, and abound on dry heaths, form the class of lichens, nearly as numerous as the preceding one; their general use in the œconomy of nature, seems to be nearly the same as that of the mosses; the ingenuity of man has, however, applied them to several other purposes. The Iceland lichen, when boiled in water or milk, produces a kind of gruel of little account in this country, but in Iceland forms an important part of the food of the inhabitants; the Lichen prunastri, serves as the base of several scented powders; that beautiful but fugitive crimson dye, the archil, is prepared in England from the Lichen parellus, and L. calcareus (Dyer's lichen). Several others are employed by the peasants of Wales, Derbyshire, and the North of England, in dyeing their home-made woollen cloths.

FUNGI.] The class of Fungi includes seventeen genera, and several hundred species of native vegetables, almost all of which are abandoned to neglect; in France and Italy several kinds are collected for the table, and are reckoned some of its principal delicacies; in this country they lie for the most part under the obloquy of being poisonous, so that only the four following are used, viz.: Chanterelle and common mushroom, Morell and Truffle.

SEA-WEEDS.] The last class of English vegetables, is that of the marine Algæ, or sea-weeds. Four genera, and between two and three hundred species are found upon our own shores; the more tender and gelatinous kinds are eaten either raw or boiled, and the rest on those rocky parts of the coast, where they can be collected in great quantities, are burnt into kelp for the use of the soap-boilers and glass-makers.

ZOOLOGY.] Mr. Pennant, in his British Zoology, has treated this subject at due extent, and with his usual ability. The nature of this work will only admit of a few imperfect notices. Of animals, that celebrated author enumerates twenty genera, from the horse down to the seal and bat. The birds extends to forty-eight, the reptiles to four, and the fish to forty genera, besides the crustaceous and shell-fish.

That noble and useful animal, the horse, is found in England of many mingled breeds, while most other kingdoms produce only one kind[21]. Our race-horses descend from Arabian stallions, and the genealogy faintly extends to our hunters. The great strength and size of the English draught-horses, are derived from those of Germany, Flanders, and Holstein; and other breeds have been so intermingled, that native horses may be found adapted to every purpose of pomp, pleasure, or utility. Those of Yorkshire are particularly celebrated for their spirit and beauty; and the grooms of that county are equally noted for their skill in the management of this valuable animal. It is somewhat remarkable, that while England excels all the European countries in various breeds of horses, yet veterinary schools are of recent institution. The speed of Childers was computed at a mile in a minute; and such is the strength of a Yorkshire pack-horse, that he will usually carry 420 pounds; nay, a mill-horse will support for a short distance, a weight of 910 pounds. Mr. Pennant observes, that though the British cavalry was remarkable, even in the time of Julius Cæsar, yet we know not what was the primitive breed.

[21] Pennant's Zoology, vol. i. p. 1.

The indigenous breed of horned cattle, is now only known to exist in Neidwood-forest, in Staffordshire, and at Chillingham-castle, in Northumberland. They are long-legged and wild like deer, of a pure white colour, with black muzzles, ears, and tails, and a stripe of the same hue along the back. The breeds of our cattle are almost as various as those of our horses; those of Wales and Cornwall are small, while the Lincolnshire kind derive their great size from those of Holstein. In the north of England we find kylies, so called from the district of Kyle, in Scotland; in the south we find the elegant breed of Guernsey, generally of a light brown colour, and small size, but remarkable for the richness of their milk. Of late years Mr. Bakewell, and others, have brought the breeding of cattle and sheep to a regular system.

The number and value of sheep in England, may be judged from the ancient staple commodity of wool. Of this most useful animal several breeds appear, generally denominated from their particular counties or districts; those of Herefordshire, Devonshire, and Cotswold downs, are noted for fine fleeces, while the Lincolnshire and Warwickshire kind, are remarkable for the quantity. The Teesdale breed of the county of Durham, though lately neglected, continue to deserve their fame. The wool is beautiful, but the length of their legs lessens their value in the eyes of the butcher. The mutton of Wales, on the contrary, is esteemed, while the wool is coarse, yet employed in many useful and salutary manufactures. The Norfolk breed is remarkable for black faces and legs. Those of Leicestershire are very large, and without horns. The Southdown are remarkable for the delicacy of the mutton.

The most laudable exertions have lately been made by the Board of Agriculture, and by individuals, for the improvement of the English fleece.

The goat, an inhabitant of the rocks, has, even in Wales, begun to yield to the more useful sheep; that country being like Scotland, more adapted to the woollen manufacture. It is to be regretted that some means are not discovered of preventing the goat, an useful animal to the poor, from being so destructive to plantations and agriculture. The breeds of swine are various and useful.

England also abounds in breeds of dogs, some of which were celebrated even in Roman times. In the reign of Elizabeth, Dr. Caius or Kay enumerates sixteen denominations of English dogs. Some seem to be now extinct; and the blood-hound only occurs in Staffordshire. The terrier, as the name implies, was used to force the burrowing animals from their holes; the harrier, a-kin to the fox-hound, for hunting the hare. The grey-hound was so called, as Caius informs us, because he was the first in *degree* among dogs. The tumbler of that author seems to be our lurcher. The spaniels from Spain, as the name imports, were trained as starters, setters, and pointers, but the latter description is modern; the water-spaniel was used to recover the slaughtered game; the spaniel gentle, or comforter of Dr. Caius, is our lap-dog; the shepherd's dog is Buffon's fanciful father of the whole canine progeny, and always displayed its docile qualities. The mastiff, or *amaze thief*, was employed in defending the house: to this species Mr. Pennant ascribes the bull-dog, an animal of surprising spirit and fierceness. The curs and mongrels are numerous; but the turnspit is now exploded. Of late the Newfoundland-dog, of more useful and generous qualities, has, in some degree, supplanted the mastiff; and the spotted Dalmatian forms an additional attendant on an equipage.

The cat is one of the most universal, and most identic of animals, those of Angola excepted, with their white fleeces, and those of Russia with a bluish fleece, and eyes of topaz.

Of our savage animals the most fierce and destructive is the wild cat, which is three or four times as large as the domestic, with a flat broad face, colour yellowish white, mixed with deep grey, in streaks running from a black list on the back; hips always black,

black, tail alternate bars of black and white; only found in the most mountainous and woody parts. The wolf has been long extinct, but the fox abounds. It is sufficient to name the badger, the fitchet, the martin, the stoat, or ermin, the otter, squirrel, dormouse, rat (the native, or iron grey, has lately almost vanished before the brown kind of India, falsely called the Norway rat), and various kinds of mice. The mole, urchin, and bat, seem to become more rare; the seal is chiefly found on the coast of Wales.

In the parks of the great, the roe is now extinct, but fallow deer abound, of great beauty, and the red deer; the latter are known by the terms, stag, hind, young, or calf; while the former are styled buck, doe, and fawn; the red kind are more vicious than the other, and becoming more uncommon.

The chief of our birds of prey, are the golden eagle, sometimes found on Snowdon; the black eagle has appeared in Derbyshire; the osprey, or sea eagle, seems extinct in England. The peregrine falcon breeds in Wales; and many kinds of hawks in England. An enumeration of the other birds would be superfluous. The nightingale, one of the most celebrated, is not found in North Wales, nor any where to the North, except about Doncaster, where it abounds; nor does it travel so far west as Devonshire and Cornwall [22]. This limitation is remarkable, as these birds are found in the severe climate of Sweden. Our poultry seem to originate from Asia; our peacocks are from India; our pheasants are from Colchis, the guinea-fowl (the Meleagrides, or Numidian hens of the ancients) are from Africa. Our smallest bird is the golden-crested wren, which sports on the highest pine-trees; and our largest the bustard, some of which weigh twenty-five pounds, and are found in the open countries of the south and east. But this bird seldom appears; and our turkeys, originally from America, richly supply the defect; the largest are reared in Norfolk and Suffolk. One of the most singular of our water-fowl is the long-legged plover: the most useful the mallard or wild duck, which is chiefly caught in the fens of Lincolnshire; the numbers sent to the capital, almost exceed credibility.

The reptiles are the coriaceous tortoise, frogs, toads, several kinds of lizards; of our serpents the viper alone is venomous; other kinds are the ringed snake, sometimes found four feet in length: and the blind worm, seldom exceeding eleven inches.

Of fish, the whale seldom appears near the English coasts, nor the dolphin; the porpoise, and others of the same genus are not uncommon. The basking shark appears off the shores of Wales. Numerous are our edible sea-fish. Some of the most celebrated are the turbot, doree, soal, cod, plaice, smelt*, mullet, &c. &c. The consumption of herrings aud mackarel extends to most parts of the kingdom; but pilchards are confined to the Cornish coasts. Our chief river fish are the salmon and the trout, which are brought from the northern parts in prodigious numbers, generally packed in ice; but sometimes the trout are brought alive, in vessels provided with a well or bason for that purpose. It is said that not less than 30,000 salmon are brought from one river, the Tweed, to London, in the course of a season. The lamprey, though a sea-fish, is chiefly found in the Severn; it resembles the eel, but has a line of seven apertures near the head. The charr is chiefly found in the lakes of Westmoreland, the sides sprinkled with red spots. The umber, or greyling, somewhat resembles the trout. The samlet is the smallest of the trout kind, and has erroneously been supposed the young of the salmon; in Scotland it is called the par. Our carps are from Poland, and the inferior sort from Prussia; the tench and perch are esteemed by some as dainties of the table.

The lobster is found on most of the rocky coasts, particularly off Scarborough. This crustaceous fish has singular habits; with its blunt claw it maintains its situation, while that with serrated pincers divides its food: the claws are reproduced, though not so

[22] Pennant's B. Z. I. 360.

* Mr. Pennant, iii. 371, supposes white bait to be the young of the bleak.

large as the first; they change their shells every year. The craw-fish is a small kind of lobster, which dwells in the clayey banks of rivers. Of shell-fish, the pearl mya, a large kind of mussel, was found in the Conway, in Wales, and the Irt, in Cumberland; but it seems now confined to Ireland and Scotland. Pearls arise from the perforation of a kind of worm, and may be produced artificially, by boring the shell, and replacing the mya in the water[23]. The English oysters maintain their Roman reputation; but they seem to yield in flavour to those of more northern countries. The green from Colchester, in Essex, and the juicy white from Milton, in Kent, have the chief reputation.

MINERALOGY.] It seldom or never happens that countries, abundant in the productions of agriculture, should, at the same time, present an opulent mineralogy. Yet England is far from being deficient in this respect.

The tin mines in Cornwall have been already mentioned; and they are not only venerable from their antiquity, but are, it is supposed, the richest of the kind in the world. Tin is also found in Bohemia, Saxony, and Hungary, and in the Oriental regions of Malacca, Banca, and Siam, but not in such lasting exuberance as in the Cornish mines. That kind of silver, termed by the mineralogists horn-ore, is also found in that district; but the profound secrecy observed in working it, forbids any investigation of the amount. The Huel rock boasts of what is called bell metal ore; and of wolfram*.

Cornwall also produces copper at Redruth, Alstone, and the Land's End. The same metal is found in Yorkshire and Staffordshire; but no where in such abundance as in the Parrys mountain, in the north-west of Anglesea[24]. Instead of descending in veins through various rocky strata, the usual form of metallic ores, it here forms a prodigious heap, and is worked in the manner of a quarry. The mountain is almost bare of shrubs or grass; and is covered with aluminous slate, under which, in grey chert, is the ore, being chiefly the yellow sulphurate, which yields a quarter of copper, and a quarter of sulphur, the remaining half being refuse. This valuable mine was discovered about thirty years ago.

Lead is found in the Mendip-hills, Somersetshire; which also produce calamine and manganese. The lead-mines in Derbyshire are well known, not only for that metal, but for the beautiful veins of fluor, which accompany it, and which is manufactured into several ornamental articles. In general the northern central ridge of mountains, abounds with lead-ore. The lead-mines of Aldston, on the eastern verge of Cumberland, employ about 1100 men.

There are rich lead mines in Wales; in Flintshire, Montgomeryshire, Caermarthenshire, but particularly in Cardiganshire, which, from the ores abounding in silver, have been called the Welsh *Potosi*.

No metal is so widely diffused through the globe as iron, and England not only contains excellent mines, but excels all nations in the variety of fabrication. The most remarkable mines of iron, are those of Colebrook-dale, in Shropshire, Dean-forest, in Gloucestershire, with some in the north of England, particularly near Ulverston, in Lancashire.

Among the minor metals, zinc, in the form of lapis calaminaris, and blend, is found in Derbyshire, Cornwall, and other regions. Nicke and arsenic sometimes appear in Cornwall; and recently, what is called menachanite. But one of the most important of this kind is plumbago, or black lead, which is found in the ridge of Borrodale, near Keswick, in Cumberland: the mine is only opened at certain intervals of time.

[23] Pennant, B. Z. iv. 80. Faujas II, 190. But this circumstance is doubtful, as may be observed in the account of Ceylon, in the second volume of this work.

* Mr. Maton informs us, that *Huel* (pronounced Whele) means a *mine*; that the tin pebbles form strata, in bueish marl, mixed with sand and marine spoils; and the richest mine is at Polgooth, two miles south-west of St Austle. (Western Tour.) *Opal* is found in yellow copper ore at Roskeir, Ibid.

[24] Aikin's Wales, 133.

Gold

Gold has been discovered in various quarters of England, particularly near Silsoe, Bedfordshire; but the metal has never recompensed the labour and expence [25]. The real gold mines of England are those of coal, found in the central, northern, and western parts, but particularly in the northern, around Newcastle. This substance is a mixture of carbon with bitumen, which last abounds in the Newcastle coal, and is the cause of its coalescing when inflamed [26]. An ingenious traveller has ascribed the whole opulence of England to her coal, as being the very soul of her manufactures, and consequent commerce [27]. The coals of Whitehaven and Wigan are more pure; and the cannel and peacock coals of Lancashire, are so beautiful, that they are suspected by some to have constituted the *gagates*, or jet, which the ancients ascribed to Britain*. A singular species of coal is found in Bovey heath, Devonshire, resembling wood impregnated with bituminous matter. Turf or peat is common, even in Hampshire, and other southern counties.

Among the grand resources for coal, must also be mentioned Staffordshire and Shropshire, which supply the centre of the kingdom — Gloucestershire and Somersetshire, whence the southern parts are furnished — and Glamorganshire and Caermarthenshire, which afford this useful article to Wales, Devon, Cornwall, and part of Ireland.

Salt Mines.] The mines of rock salt, in Cheshire, must not be omitted. They appear to have been known to the Romans, as a place called *Salinae* is here mentioned by the geographer of Ravenna. Leland has described them in the time of Henry VIII. nor were they unknown even in the Saxon periods. Those of Northwich are the most remarkable: at Namptwich and Middlewich, are only salt springs; and others occur at Droitwich, in Worcestershire, and Weston, in Staffordshire. The immense mines on the south side of Northwich, were discovered about the beginning of the last century. The quarries, with their pillars and crystal roof, extending over many acres, present a beautiful spectacle; the stratum of salt lies under a bed of whitish clay, at the depth of about forty yards. The first stratum is about twenty yards thick, so solid as to be blasted with gunpowder, this salt resembles brown sugar-candy. Next is a bed of hard stone, under which is a second stratum of salt, about six yards thick, some parts brown, others as clear as crystal. The Witton pit is circular, 108 yards in diameter, the roof supported by twenty-five pillars, each containing 294 solid yards of rock salt; the whole covering near two acres of land. The annual produce of rock salt at Northwich, has been estimated at 65,000 tons; of which about two-thirds used to be exported to Flanders and the Baltic [28]. Holland says 84,933 tons [29].

Marbles, and free-stone, or calcareous sand-stone, of various colours and textures, also occur; the most celebrated of the latter are those of Portland, Purbeck, &c. Fine alabaster appears in Derbyshire; fuller's earth in Berkshire, and some other counties.

Mineral Waters.] Nor is England less productive of mineral waters, of various properties and descriptions. Those of Bath have been celebrated since the Roman times. Next to that place of fashionable resort, may be mentioned the hot-wells of Bristol, those of Tunbridge in Kent, and of Buxton and Scarborough in the North. Those of Cheltenham in Gloucestershire, have been esteemed beneficial in scorbutic

[25] Gough's Camden, i. 330.

[26] Kirwan's Min. II. App. but Mr. Hatchett has evinced a mixture of vegetable matter. The Bristol coal, so abundant at Kingswood, burns more rapidly than that of Newcastle. [27] Faujas de St. Fond.

* True jet is said to be found in Lincolnshire; it abounds in the south of France, and north of Spain, being palpably ancient timber.

[28] Pennant's Journey from Chester to London, p. 26. (He estimates the duty at 20,000*l.*) Gough's Camden, ii. 436, Aikin's Manchester, 427. There is a salt spring in the middle of the river Were, not far from Durham; and it is highly probable that a mass of salt exists in that quarter, and might be mined with great advantage. [29] Cheshire, 321,

cases;

cases; but to enumerate the springs of inferior note, would be infinite, as chalybeat wells at least must occur in almost every county, and new waters are daily starting into celebrity.

NATURAL CURIOSITIES.] Among the natural curiosities, those of Derbyshire have always been esteemed the most memorable. Hobbes and others have long since celebrated the wonders of the Peak, a mountain not equal in height to those of Wales, or the more northern part of England, but perforated with such vertical chasms, and such surprising caverns as have deservedly excited admiration. These caves are often intersected by subterraneous waters; and mineralogists seem to ascribe their formation to this cause, the rock being of calcareous stone. These subjects have now become too trite and familiar to allow further description; and it shall only be observed, that the cavern at Castleton, now decently called Peak's hole, is of a vast extent, and presents singular aspects, while Poole's hole, near Buxton, is celebrated for its lofty roof, and curious stalactites. Near Eyam is Bamforth-hole, a stalactitic cavern of considerable extent[30].

Other remarkable caverns are found in the northern ridge of English mountains. In the vale of Kingsdale, on the western extremity of Yorkshire, is Yordas cave, which presents a subterraneous cascade; this cave is about fifty yards in length. But the most noted is Wethercot cave, not far from Ingleton. It is surrounded with trees and shrubs, in form like a lozenge, divided by an arch of lime-stone, passing under which you behold a large cascade, falling from a height of more than twenty yards; the length of this cave is about sixty yards, the breadth thirty. The vast lime-stone base of Ingleborough is perforated in all directions like a honeycomb. It is the river Wease, or Greta, which pervades the cave at Wethercot, and another at Gatekirk, and runs not less than two miles under ground. This stream must not be confounded with the Greta, which falls into the Tees near Barnard-castle, and rises near Brough, in Stanmore; two rivers, the Ouse and the Swale, running betwixt them. Among other curiosities in this neighbourhood, must not be omitted Hurtlepot, a round deep cavity, near forty yards in diameter, almost surrounded with rocks, about thirty feet perpendicular, above its black waters, while the overbranching trees increase the horrors of the scene[31]. Not far to the south-east, is a lake called Malham Tarn, of clear and very cold water, abounding in trout. This is the source of the river Aire, which runs about a mile under ground; and near it is Malham cove, a kind of amphitheatre, of smooth perpendicular lime-stone, about 280 feet high in the centre. The river Ribble, near its origin in these parts, also sinks into a deep cavern; and silently pervades the mountains for about three miles. Near Settle, at the bottom of some calcareous rocks, is one of the most remarkable ebbing and flowing wells in the kingdom[32]. This district also abounds with rare and curious plants: and in the grand features of nature, exceeds any other region in England or Wales*.

The lakes of Cumberland form another grand scene of attraction, but it would be idle to attempt to depict, in a few words, beauties which have been described by so many authors, and particularly by the glowing pencil of a Gray. Suffice it to observe, that the three most celebrated lakes are those of Coniston, Windermere, and Derwent.

[30] Aikin's Manchester, p. 76. Faujas, tom. ii.

[31] West's Guide to the Lakes; and a curious pamphlet on the caves of Yorkshire, 1781, 8vo. By Housman's Map, this Greta passes by Ingleton to the Lon and Lancaster.

[32] Aikins's Manchester, p. 91.

* Mr. Housman also gives a good account of these curiosities; he observes, p. 26, that rocks are in Cumberland called *Linns*, (whence the name is in Scotland applied to a cataract); and Sour Milk Force, near the bottom of Buttermere lake, is supposed to fall upwards of 300 yards. A curious cave was lately discovered, p. 83, by miners near Crossfell, said to be two miles in length, and full of splendid spars. Gordale Scarr, p. 199, near Malham cove, is a dreadful rent through high rocks, worthy of the attention of a curious traveller.

The

The beauties of the first have been compared to the delicate touches of Claude; the noble scenes of the second, to those of Poussin; while Derwent has much of the sublime mildness of Salvator Rosa: but most travellers esteem Ulswater the most truly sublime.

The mountainous regions of Wales may well be supposed to present many natural curiosities; and the Parry's mine in Anglesea is in itself a surprising object. The cataracts in Cumberland are rivalled by a remarkable fall of the Tees, on the west of the county of Durham, over which is a bridge suspended by chains, seldom passed but by the adventurous miners; nor must Asgarth force, in Yorkshire, be passed in silence.

Near Darlington, in the county of Durham, are three pools of great depth, about thirty yards, called Hell Kettles, concerning which many fables have been current, as is usual with all nations, concerning any natural phenomena. The cliffs near Sunderland consist of a singular stone, resembling coraline productions; and so firm as to be generally used there in building*.

The sub-marine relics of a forest, on the coast of Lincolnshire, may be deservedly classed among the most remarkable natural curiosities. Nor are the lofty chalk cliffs of Dover without their claim. The cavern near Ryegate, in Surry, descending through a hill of the finest and most splendid sand, must rather claim an artificial origin. At Brosely, in Shropshire, was a well so impregnated with bitumen, that, on the application of a candle, the stream took fire, and would boil a tea-kettle in nine minutes[33]; but, by opening other coal-pits in the vicinity, this phœnomenon disappeared: a similar appearance and event also occurred in Lancashire[34]. But Shropshire still contains a remarkable well of bitumen, at a place thence styled Pitchford. Cheddar cliffs, in Somersetshire, may also be mentioned among the natural curiosities; and the Mendip-hills are not without their caverns, particularly Wookey-hole, near Wells, a stalactitic cavern of about 600 feet in length, divided by low passages into various apartments; one of which, called the hall, somewhat resembles a Gothic chapel, and is said to be eighty feet in height; while the furthest, styled the parlour, is of moderate height, but extensive diameter. On the N. W. side of the Mendip-hills, is a yet more remarkable curiosity, a considerable cavern, at the bottom of a deep ravine, near the little village of Berrington, or Burrington. Here are a number of human bones, gradually incorporating with the lime-stone rock; there being a continual dripping from the roof and sides, which deposits a stalactitic sediment on the bones. Several nodules contain perfect human skulls. At the further end, where the height is about fifteen feet, there is a large conic stalactite, which nearly meets a pillar rising from the floor. This cave was discovered in 1796; and as the matter increases so fast, it is conjectured that it would soon have been closed up[35]. Hence it is probable that these bones are of no remote antiquity, and may, perhaps, be the remains of some wretches who had here taken shelter from the cruelty of Jeffries, after the insurrection of Monmouth †.

* The like stone occurs in Ingria, and the palace of Peterhoff is constructed with it. The Ammonitic stone of Broad Marston, Somersetshire, is another singular production.

[33] Phil. Trans. No. 334. and 482. [34] Gough's Camden, II. 397. 412.

[35] Transact. of the Linnæan Society, vol. v. Philosoph. Mag. vii. 146.

† There is a remarkable cave, or rather pit, supposed to have been an ancient mine, called Penpark-hole, about five miles to the north of Bristol. A pamphlet, published by Mr. Catcott, contains the dimensions of this horrible chasm, and an affecting account of the fate of Mr. Newnam, who fell into the gulph while he was measuring its depth.

ENGLISH ISLES.

Isle of Wight.] In the Southern, or English Channel, first appears the Isle of Wight, by the Romans called *Vectis*, by the Saxons *Vihtlond*, of an oval form, about twenty miles in length, and twelve in breadth. This isle is fertile and beautiful, and decorated with many picturesque villas; the principal haven is that of West Cowes*, the chief town Newport. The mineral products are pipe clay, and fine white sand, for the fabrication of pure glass; and at Alum-bay, on the north side of the Needles, are found considerable quantities of native alum[1]. It is said that more corn was once raised in the Isle of Wight in one year, than the inhabitants could consume in eight. One of the most remarkable buildings is Carisbrook-castle, where Charles I. was imprisoned; it was built soon after the conquest, as appears from the Book of Doomsday. The lofty white rocks, styled the Needles, seem to have been disjointed from the western extremity of the isle, by the violence of the waves. There were formerly three; but about the year 1782, the tallest, which rose about 120 feet above the low-water mark, was overthrown, and totally disappeared[2].

At the distance of about seventy miles from Wight, to the south-west, arises the little isle of Alderney, off the Cape la Hogue; which is afterwards followed by the more important isles of Jersey and Guernsey; Sark being a small isle interposed between the two latter. Jersey the chief, is about twelve miles in length, and six in breadth, a well watered and fertile island, producing excellent butter and honey. The winters are milder, but more windy, than those of England. The breed of sheep, with four or six horns, seems now unknown. The northern side of the island is high, but the southern subsides into pleasant vales, covered with orchards. It is said that this isle has sometimes produced in one year 24,000 hogsheads of cyder. The remarkable places are the two towns of St. Helier and St. Aubin, both standing on a bay, opening to the south; and the castle of Mont Orgueil. The inhabitants of Jersey are computed at, 20,000, of which 3000 are capable of arms. In January, 1781, St. Helier was surprised by 800 French under Rullicourt, who was killed, while Major Pierson fell on the side of the English, his valour being commemorated by paintings and prints, and by a handsome monument in the church of St. Helier. Guernsey is about ten miles in length, eight in breadth, and about thirty in circuit. It is a verdant isle, though the soil be hilly and barren of wood. The only town is that of Port St. Pierre; and Guernsey is chiefly remarkable for its small elegant breed of cattle. Alderney is a small isle, with a town, and about 1000 inhabitants[3].

Eddistone.] Returning to the English shore, we first descry Eddistone light-house, beat by all the fury of the western waves. This edifice has repeatedly been overthrown, but the present erection by Mr. Smeaton, composed of vast masses of stone, grooved into the rock, and joined with iron, promises alike to defy accidental fire, and the violence of the ocean, though the waves sometimes wash over the very summit in one sheet of foam.

Scilly.] About thirty miles to the west of the Land's End, appear the Isles of Scilly, which have been idly deemed the Cassiterides of the ancients, though these rocks be too minute to have attracted their notice. This cluster pretends to the name of 145 isles, covered with grass or moss, besides innumerable dreary rocks. The largest isle is that of St. Mary, which is about five miles in circuit, and has a castle and garrison; inhabitants about 600. That of St. Agnes is rather fertile, inhabitants about

* The other anchorages are Brading bay, Ride, Newton, and Yarmouth.

[1] Gough's Camdem, i. 143. [2] Worsley's Isle of Wight, p. 274

[3] Gough's Camden, iii. 753. These isles chiefly consist of various kinds of granite.

1. From Donelly and others. 2. From various charts. 3. From Debree.

Lowry sculpt.

Published March 1st 1802 by Cadell and Davies, Strand. and Longman and Rees, Paternoster Row.

300. The whole inhabitants of the Scilly Isles are computed at about 1000. The cattle and horses small; but sheep and rabbits thrive well. Considerable quantities of kelp are prepared amid these rocks[4].

LUNDY.] On turning to the north, first appears the little isle of Lundy, situated in the Bristol Channel, about three miles long, but not a mile in breadth, with about 500 acres of good land, and a castle. It was formerly a noted retreat for pirates.

ANGLESEA.] Some small isles lye off the Welsh coast of Pembrokeshire and Caernarvon, such as Caldy, Skomar, Bardsey, and others*; but the isle of Anglesea deserves more attention, being the Mona of Tacitus, while the Isle of Man is more properly the Monæda of the ancients. Anglesea is about twenty-five miles in length, and eighteen in breadth. The chief towns are Newburgh, Beaumaris, and, on the western extremity, fronting Ireland, Holyhead. This isle was so remarkably fertile, that the Welsh have emphatically styled it the mother of Wales; and of late has been also productive of rich copper, found in the Parrys mountain, in the north-east part of the island, near Amluch, of which an account has been given in treating of the English minerals. This isle also produces green serpentine, with asbestos. Beaumaris is a large town, with a castle built by Edward I. Newburgh is a corporation of smaller moment. Holyhead, originally a fishing town, has become of consequence, by the Irish packets which pass daily, the average time being twelve hours.

MAN.] The last English isle worth mention, is that of Man; it is about thirty miles in length, and fifteen in its greatest breadth. In the midst is a high mountain, called Snafel. The chief mineral productions are black marble, slate, lime-stone, lead, copper, and iron. Man is also well stored with black cattle and sheep; and the population has of late years greatly increased. This isle was seized by the Norwegians, along with the Western Isles of Scotland, in the ninth century; and remained under these lords an independent kingdom, till the thirteenth century, when it fell with those islands to Alexander III. of Scotland. The Scots were expelled in the reign of Edward II. but the title continued dubious, for in the fifteenth and sixteenth centuries, Alexander and John, Dukes of Albany, styled themselves Lords of Man, and interwove the arms in their heraldry. In the reign of Henry IV. the kingdom of Man was conferred on the Stanleys, afterwards Earls of Derby, and latterly passed to the family of Athol by marriage. This petty sovereignty has been since purchased and annexed to the English crown. The chief places are Douglas and Castletown, and there are some considerable villages.

THANET.] There are also some small islands off the eastern coast, as Lindisfarn, and Coquette island, near the mouth of the river of that name, in Northumberland. The isle of Thanet is now joined to the land of Kent; but Sheppey remains a pleasant and interesting isle.

[4] Ibid. * Barry, a small isle, south-west of Cardiff, is lately noted for sulphate of strontian, also found at Old Passage, fourteen miles north-west of Bristol, and near Mendip hills.

SCOTLAND.

CHAPTER I.

Names. — Extent. — Original Population. — Progressive Geography. — Historical Epochs. — Antiquities.

NAMES.] SCOTLAND was first discovered to the Romans by Agricola; and the luminous pages of Tacitus disclosed the situation and manners of the country. It is not improbable that the Thule of the Phœnicians may have been the main land of Shetland; or, perhaps, as some think, even the north of Scotland, which the Phœnicians, standing out to sea, and afterwards bending their course towards the land, may have mistaken for another island, a circumstance not unusual in the annals of navigation. However this be, not even a hint that can be positively applied to Scotland, can be found in the ancient writers, till the Flavian family held the Roman sceptre.

Tacitus discriminates the northern part of Britain from the southern, by the special and repeated appellation of Caledonia, a name said to be derived from a Cumraig word, signifying woodlands, forests, or, perhaps, rather a mountainous country, for the ancients often blended the ideas of forest and mountain; the Riphæan mountains, for instance, being, in fact, only a vast forest, as no mountains are to be found in that situation and direction.

The names *Caledonia*, and *Caledonians*, continued to be used till the Roman power expired. Bede, the father of English history, calls the inhabitants of the country, by the name of *Picti*, which had also been used by the later Roman writers, as synonymous with that of *Caledonii*. The country he denominates, in the lax barbaric Latin of that age, *Provincia Pictorum*, the province, or region of the Picti. This new name seems to have been native (Piks, or Pehts); and to have originated from a country so styled, in the south of Norway, whence this colony had arrived. The Saxon writers, and among them King Alfred, call the people Peohts, and the country Peohtlond.

These distinctions continued till the eleventh century, when the new name of Scotia was taken from Ireland, its former object, and applied to modern Scotland. This confusion seems to have originated from the vanity or affectation of the Irish clergy, who were established in Scotland, and were the sole instructors of the people; no native Caledonian saint being mentioned in the ecclesiastic annals, till the twelfth century, the Picti retaining much of the ignorance and ferocity of their Scandinavian progenitors. Nor can the new term *Scotland*, be properly derived from any pretended conquest of the Picti, by the Attacotti, a colony of Scots or Irish, who had settled in Argyleshire,

as

Arrowsmith direxit.

From Genl. Roy's Map corrected in Positions, and the Surveys of the different Shires.

Lowry sculp.

Published March 1st 1802. by Cadell and Davies Strand, and Longman and Rees Paternoster Row.

as the Saxon and Irish authors continued to use the former appellations for three centuries after that event is said to have happened.

EXTENT.] That part of Great Britain called Scotland, is about 260 miles in length, by about 160 at its greatest breadth; it extends from the 55th degree of latitude, to more than 58½. The superficial contents have been computed at 27,793 square miles, a little exceeding that of Ireland, and considerably more than half that of England. The population being estimated at 1,600,000, there will of course be only fifty-seven inhabitants, for every square mile, a proportion of about one-third to that of Ireland. This defect of population arises solely from the mountainous nature of the country, amounting, perhaps, to one half, little susceptible of cultivation.

NAMES, &c.] The Scotish counties are as follow, the number of inhabitants being estimated from the enumeration of 1801.

	Counties.	Inhabitants.
Northern Division.	Orkney	46,844
	Caithness	22,609
	Sutherland	23,117
	Ross	52,291
	Cromarty	3,052
	Inverness	74,292
Midland Division.	Argyle	71,859
	Bute	11,791
	Nairn	8,252
	Murray, or Elgin	26,705
	Banff	35,807
	Aberdeen	123,082
	Mearns, or Kincardine	26,349
	Angus, or Forfar	99,127
	Perth	126,366
	Fife	93,743
	Kinross	6,725
	Clackmannan	10,858
	Stirling	50,825
	Dunbarton	20,710
Southern Division.	West Lothian, or Linlithgow	17,844
	Mid Lothian, or Edinburgh	122,954
	East Lothian, or Haddington	29,986
	Berwick	30,621
	Renfrew	78,056
	Ayr	84,306
	Wigton	22,918
	Lanark	146,699
	Peebles	8,735
	Selkirk	5,070
	Roxburgh	33,682
	Dumfries	54,597
	Kirkudbright	29,211

ORIGINAL POPULATION.] So far as historical researches can discover, the original population of Scotland consisted of Cimbri, from Cimbric Chersonese. About two centuries before the Christian æra, the Cimbri seem to have been driven to the south of Scotland by the Caledonians or Picti, a Gothic colony from Norway. The Cimbri, a congenerous people with the Welsh, continued to hold the country south of the two firths of Forth and Clyde; but from the former region they were soon expelled by the Picti, who, in this corner, became subject for a time to the Anglo-Saxon kings of Bernicia. On the west, the Cumraig kingdom of Strath Clyde continued till the tenth century, when it became subject to the Kings of North Britain; who at the same time extended their authority, by the permission of the English monarchs, over the counties of Cumberland and Westmoreland, which abounding with hills and fortresses on the south and east, were little accessible to the English power; and while the Danes possessed the country to the north of the Humber, could yield little revenue or support to the Anglo-Saxon monarchs. From the Picti originates the population of the Lowlands of Scotland, the Lowlanders having been in all ages a distinct people from those of the western Highlands, though the Irish clergy endeavoured to render their language, which was the most smooth and cultivated of the two, the polite dialogue of the court and superior classes. About the year of Christ 258, the Dalriads of Bede, the Attacotti of the Roman writers, passed from Ireland to Argyleshire, and became the germ of the Scotish Highlanders, who speak the Irish or Celtic language, while the Lowlanders have always used the Scandinavian, or Gothic.

PROGRESSIVE GEOGRAPHY.] The progressive geography of Scotland, is little opulent in materials. In the second century we find a map of North Britain, by Ptolemy; but by some singular error, it is as inaccurate as his map of Hindostan; for he represents the Mull of Galloway as the most northern promontory of Scotland, and thence bends the country due east, so that all his longitudes and latitudes are fictitious*. This striking instance evidences that he often accommodated his longitudes and latitudes, from mathematical conjecture, to careless sketches which had been taken by the Roman engineers, or by navigators. But his distribution of the tribes which then inhabited Scotland, may be regarded as tolerably exact. In the centre of the country he places a vast forest, which he calls the Sylva Caledonia, chiefly extending over modern Perthshire, an indication that the colonies had settled on the shores, and that the interior part of the country was little known. The Otadeni were the people of modern Northumberland and Lothian; the Selgovæ extended over Dumfrieshire, and Kircudbright, to the bay of Wigton, while the Novantæ filled modern Wigtonshire, and extended upwards to Ayre-bay. The fourth southern tribe was that of the Damnii, who possessed the central region, from near the source of the Clyde, to that of the Erne. On the north-east of the Damnii were the Venicontes, from the Frith of Forth to the river Dee, while the Texali held the modern shires of Aberdeen and Bamf. To the west of them were the Vacomagi, extending from Fort William to the Castra Alata or Inverness. The other tribes scarcely deserve enumeration: the Cornabii possessed the most northern parts of Scotland, from Dunsby-head to Strathnaver. Four tribes extend along the north-west, down to Loch Linny; to the south of which are placed the Epidii, in Argyleshire, who were divided by Loch Fyn from the Gadeni, who held that part to the east of Argyleshire, called Cowal, in the county of Dumbarton.

After the time of Ptolemy little information arises concerning the geography of Scotland, till, after the lapse of seven or eight centuries, we find the dawn of the present names and divisions. In the latter Roman period, the province of Valentia embraced that part which was south of the Clyde and Forth; as for a short space,

* See the letter of M. Gossellin to Mr. Pinkerton, in the *Recherches sur les Scythes*, Paris 1804, 8vo.

from

from about A. D. 140 to 170, the name of Vespasiana had been imparted to the region extending from the Forth to Loch Ness. The remains of Roman roads form the chief evidence of the firm possession of the latter province.

In the middle ages, the name of Albany had been applied to that part of Scotland which lies on the north of the Firths; and about the year 1200, was written the *Descriptio Albaniæ*. In the fourteenth century, Fordun produced a larger and more precise idea of Scottish geography. Harding, who wrote his rhyming Chronicle in the reign of Edward IV., gives a tolerably exact description of Scotland, which he had visited; and some manuscripts of his work contain a rude map of the country. It must be observed, that the misapprehensions of Ptolemy concerning the due position of North Britain, are rectified, even in old Anglo-Saxon drawings. The first-engraved map is that published by Bishop Lesley, with his History; but it abounds with portentous errors, which have been slowly removed. The Atlas published in the last century, does honour to the industry and abilities of Pont, and the munificence of Sir John Scott; and the recent exertions of Dorrett, Roy, Mackenzie, Huddard, Ainslie, and others, have contributed to establish some exactness in the geographical and hydrographical delineation of the country.

HISTORICAL EPOCHS.] The original population of Scotland by the Cimbri, and by the Picti, forms, as usual, the first historical epoch.

2. The entrance of Agricola into Scotland, and the subsequent conflicts with the Romans, till the latter abandoned Britain.

3. The settlement of the Dalriads, or Attacotti, in Argyleshire, about the year 258, and their repulsion to Ireland about the middle of the fifth century.

4. The commencement of what may be called a regular history of Scotland, from the reign of Drust, A. D. 414.

5. The return of the Dalriads, A. D. 503, and the subsequent events of Dalriadic story.

6. The introduction of Christianity among the Caledonians, in the reign of Brudi II. A. D. 565.

7. The union of the Picti and Attacotti, under Kenneth, A. D. 843.

8. The reign of Malcolm III. A. D. 1056; from which period greater civilization began to take place, and the history becomes more authentic.

9. The extinction of the ancient line of kings, in the person of Margaret of Norway, grand-daughter of Alexander III. A. D. 1290. This event occasioned the arbitrary interposition of Edward I. King of England, which was the sole source of the enmity which afterwards unhappily prevailed between the kingdoms.

10. The accession of the House of Stuart to the Scottish throne; a family which produced most ingenious and intelligent, but most unfortunate princes.

11. The establishment of the Protestant religion, A. D. 1560.

12. The union of the two crowns, by the accession of James VI. to the English sceptre, A. D. 1603.

13. The civil wars, and the subsequent disputes between the Presbyterians and Independents; causes that extinguished all sound literature in Scotland, for the space of 20 years, A. D. 1640—1660.

14. The revolution of 1688, and the firm establishment of the Presbyterian system.

15. The union of the two kingdoms, in 1707.

16. The abolition of the hereditary jurisdictions, 1755, which laid the first foundation of the subsequent prosperity in Scotland.

ANTIQUITIES.] The monuments of antiquity belonging to the more early epochs, may be considered in the following order: Of the first epoch, no monuments can exist, except

except those of the tumular kind; and it is impossible to ascertain the period of their formation. The remains of the Roman period in North Britain, chiefly appear in the celebrated wall, built in the reign of Antoninus Pius, between the firths of Forth and Clyde, in the ruins of which many curious inscriptions have been found. Another striking object of this epoch, was a small edifice, vulgarly called Arthur's Oven, which seems rightly to have been regarded by some antiquaries, as a small temple, dedicated to the God Terminus, probably after the erection of the wall of Antoninus, for we are not to conceive that these walls were the absolute lines, beyond which the Romans possessed no territory; while, on the contrary, in the pacific intervals, the garrisons along the wall may have claimed the forage of the exterior fields; and the stream of Carron, beyond which this chapel stood, may have been considered as a necessary supply of water. The remains of the wall and forts, and other Roman antiquities in Scotland, particularly their camps and stations, many of which are remarkably entire, are ably illustrated in a late publication of General Roy*, to which this reference must suffice, with this sole remark, that the ingenious author has too implicitly followed a common antiquarian error, in ascribing all these camps, stations, &c. to Agricola, while they may be more justly assigned to Lollius Urbicus, A. D. 140, or to the Emperor Severus, A. D. 207; especially, indeed, to the latter, for the Emperor's appearance in person to conduct two campaigns, probably as far as Inverness, must have occasioned the erection of works more eminent and durable than usual, the soldiers being excited by the animating controul of a military monarch. Constantius Chlorus also, A. D. 306, made a long progress into Scotland, if we trust the Panegyrists. Nay, in the reign of Domitian, Bolanus, as we learn from Statius the poet, erected several works in Britain, probably in the north; so that it is idle to impute these remains to any one author: but to a judicious eye, the claims of Lollius Urbicus, and of Severus, seem preferable. The most northerly Roman camp yet discovered, is that near the source of the river Ythan, Aberdeenshire; periphery about two English miles. A smaller station has also been observed at Old Meldrum, a few miles to the south-east.

Roman roads have been traced a considerable way in the east of Scotland, as far as the county of Angus, affording some evidence of the existence of the province Vespasiana; but the chief remains are within the wall. A hypocaust was also discovered near Perth, and another near Musselburgh, so that there was, probably, some Roman station near the Scotish capital, but the name of Alaterva is a ridiculous error, arising from an inscription, by some foreign cohort, to obscure goddesses of their own country, styled *Matres Alatervæ*. The smaller remains of Roman antiquity found in Scotland, as coins, utensils, &c. are numerous.

With the fourth epoch may be said to commence the Pikish monuments of antiquity. The tombs it would be difficult to discriminate from those of the first epoch; but as the Caledonian kings, when converted to Christianity, held their chief residence at Inverness, the singular hill in its vicinity, presenting the form of a boat reversed, may, perhaps, be a monument of regal sepulture. The places of judgment among the Gothic nations, or what are now styled Druidic temples, are numerous; and there is a remarkable one in the Isle of Leuis, where, probably, the monarchs resided in the most early times; but this, perhaps, rather belongs to the Norwegian settlement in the ninth century. Some of these monuments are of small circuit, and such are sometimes found at no great distance from each other; as they were not only sometimes erected merely as temples to Odin, Thor, Freyga, and other Gothic deities, but every chief, or lord of a manor, having jurisdiction over many servants and slaves, such small courts became places of necessary awe.

* Roman Antiquities of Scotland, published by the society of Antiquaries, folio.

The

The houses seem to have been entirely of wood or turf; but in some spots singular excavations are found rudely lined with stone: these are called *Weems*, and it is likely that they were always adjacent to the wooden residence of some chief, and were intended as depositories of stores, &c. the roofs being too low for comfortable places of refuge. The stations and camps of the natives, are distinguished by their round form, while those of the Romans belong to the square.

Under the next epoch it would be difficult to discover any genuine remains of the Dalriads. The houses, and even churches, were constructed in wattle work; and the funeral monuments were cairns, or heaps of stones. It is probable that Christianity did not immediately dissolve ancient prejudices, and that even the Attacottic kings were buried in this rude manner, for the genuine chronicles do not affirm that they were conveyed to Hyona, or Icolmkill; and the sepulchres there shewn of Irish and Norwegian kings, must be equally fabulous.

To the sixth epoch may probably belong a chapel or two, still remaining in Scotland, for Bede informs us, that Nethan III. A. D. 715, obtained architects from Ceolfrid, abbot of Jarrow and Weremouth, to build a church in his dominions, probably at Abernethy; but the round tower there remaining, seems of more recent origin. About the year 830, Ungust II. founded the church of St. Andrew's; and the chapel called that of St. Regulus, (who seems unknown in the Roman calendar,) may, perhaps, claim even this antiquity. It is probable that these sacred edifices in stone were soon followed by the erection of those rude, round piles, without any cement, called Piks houses: yet they may more properly belong to

The seventh epoch, when the Danes may, if they choose, share in the honour of the erection, for such edifices have been traced in Scandinavia. They seem to have consisted of a vast hall, open to the sky in the centre, while the cavities in the wall present incommodious recesses for beds, &c. These buildings are remarkable, as displaying the first elements of the Gothic castle; and the castle of Coningsburgh, in Yorkshire, forms an easy transition. The engraved obelisks, found at Forres, and in other parts of Scotland, have been ascribed to the Danish ravagers, who had not time for such erections. They are, probably, monuments of signal events, raised by the king or chiefs, and as some are found in Scandinavia, as recent as the fifteenth century, it is probable that many of the Scotish obelisks, are far more modern than is generally imagined*.

To enumerate the churches and castles, erected since the reign of Malcolm III. would be infinite. Some of the most splendid churches derive their foundation from David I. in the twelfth century.

* The noted vitrified forts seem to belong to the thirteenth century. See Enquiry into the History of Scotland, 2 vols. 8vo.

CHAPTER II.

Religion.—Ecclesiastical Geography.—Government.—Laws.—Population.—Colonies.

RELIGION.] SINCE the Revolution, 1688, the Ecclesiastical Government of Scotland is of the Presbyterian form; an establishment attempted in the sixteenth century, but uniformly opposed by the monarchs, as unfavourable to the royal influence. Experience has shewn that the prejudice was unfounded; but violent commotions happened before the Presbyterian triumph became firm. The number of parishes in Scotland is 941[1]; contiguous parishes unite in what is called a Presbytery, of which denomination there are sixty-nine. The provincial synods, amounting to fifteen, are composed of several adjacent presbyteries: but the grand ecclesiastical court is the General Assembly, which meets every year, in the spring, the King appointing a commissioner to represent his person, while the members nominate their moderator or president. To this ecclesiastic council laymen are also admitted, under the name of Ruling Elders, and constitute about one-third of this venerable body. This Court discusses and judges all clerical affairs, and admits of no appeal, except to the Parliament of Great Britain. In general the Scotish clergy deserve the highest praise, as men of enlightened minds and moderate conduct; and a singular proof of the diffusion of talents among them, has recently appeared in the Statistical Account of Scotland, published by Sir John Sinclair, in twenty-one volumes; for there are few parishes of which the account is not ably delineated by the clergyman himself; a phœnomenon in the literary world, which will hardly be rivalled by 900 philosophers, or rather theorists of the modern school.

As whatever establishment is effected in a free country, opposition will always arise, the establishment of the Presbyterian system, was, in the space of one generation, followed by the secession. In 1732, about forty ministers presented an address to the general assembly, specifying several defections, which, in their opinion, had taken place, from the original constitution of the church, which, in truth, had too much of the rigour of Calvin. Some of the Seceders were deprived of their livings by a committee of the general assembly. Persecution, as usual, produced followers, and the Seceders soon formed a numerous party. About the year 1747, they were themselves divided into two denominations, called the Burghers, and the Anti-Burghers, because the division arose concerning the legality of the oaths taken by the burgesses of some of the royal boroughs; the former allowing that the oath is proper, while the latter object; the former are the more numerous, the number of their ministers being computed at about 100, and at a medium each has a congregation of about 1000.

Many respectable families in Scotland, embrace the episcopal form of the Church of England. The other descriptions of religious professions, are not numerous. There are but few Roman Catholics, even in the remote Highlands, the scheme of education being excellent, and generally supported with liberality.

ECCLESIASTIC GEOGRAPHY.] To delineate the Ecclesiastical Geography of Scotland, would be to enumerate its parishes; nor are the presbyteries and synods of such account as to influence the fate of the towns where they assemble. The ancient establishment comprised two archbishoprics, those of St. Andrews and Glasgow; and

[1] Statist. Account.

eleven

eleven bishoprics (that of Edinburgh having only been established by Charles I.) which, in the order of antiquity, may be thus enumerated; Galloway (St. Andrews) Dunkeld, Moray: five founded by David I., Brechin, Dumblane, Aberdeen, Ross (Glasgow); that of Argyle, or Lismore, was founded about the year 1200, because the bishops of Dunkeld did not speak the Irish tongue. The bishops of Orkney, and of the Western Islands, date from an early period, while their sees were not subject to the Scotish crown.

GOVERNMENT.] The Government of Scotland, since the union, has been blended with that of England. The chief distinction between the original constitution of the two countries, was, that Scotland had no House of Commons, the parliament consisting of all descriptions, assembled in one hall. That enlightened prince, James I. of Scotland, endeavoured to establish a House of Commons, in imitation of that of England, where he was educated; but the people most firmly and vigorously defended their slavery. The most splendid remaining feature of government in Scotland, is the General Assembly. Next to which may be classed the high courts of justice, especially that styled the Session, consisting of a president and fourteen senators. The Lords of Session, as they are styled in Scotland, upon their promotion to office, assume a title, generally from the name of an estate, by which they are known and addressed, as if peers by creation, while they are only constituted lords by superior interest or talents. This court is the last resort in several causes, and the only appeal is to the parliament of Great Britain. It is to be regretted, that the causes are not determined by jury as in England. The justiciary court consists of five judges, who are likewise lords of session, but with a president styled the Lord Justice Clerk, as he is only understood to represent the formerly great office of Justice General. This is the supreme court in criminal causes, which are determined by the majority of a jury, and not by the unanimity, as in England. There is also a Court of Exchequer, consisting of a Lord Chief Baron, and four Barons; and a High Court of Admiralty, in which there is only one judge. The keepers of the great and privy seals, and the Lord Register, or keeper of the records, may also be mentioned under this head.

LAWS.] The law of Scotland differs essentially from that of England, being founded, in a great measure, upon the civil law. It partly consists of statute law; but many of the ancient statutes never having been enforced, the chief rule of this sort arises from the decisions of the session, which are carefully preserved and published, and afford precedents generally deemed unexceptionable. Of common law there is hardly a trace, while the civil and canon laws, may be said to form the two pillars of Scotish judicature. The modes of procedure have, however, the advantage of being free from many of those legal fictions, which disgrace the laws of some other countries. It may, indeed, be deemed a fiction, that a debtor, who refuses or neglects to pay, should be proclaimed a rebel to the King, and as it is called, *put to the horn*, before he can be imprisoned. The inferior courts are those of the sheriffs, magistrates, and justices of the peace. Under the hereditary jurisdictions, happily abolished, the peers and other great men maintained a power, almost absolute, over their tenants and followers, so that there was no law but the will of the master, and the cities alone could be deemed seats of freedom.

POPULATION.] The most exact account of the population of Scotland, is that given in the Statistical Account[2], from which it appears that the amount, in 1798, was 1,526,492; while, in 1755, it was only 1,265,380; the increase, therefore, is 261,112. The most populous counties are, in the order of numbers, Perth, 133,274; Lanark, 125,254; Aberdeen, 122,921; Mid-Lothian, 122,655; Forfar, 91,001; Fife, 87,250; Argyle, 76,101.

[2] Vol. xx. p. 620.

COLONIES.] There are no Scotish colonies distinct from those of England; that of Darien, attempted in the reign of William III., was unsuccessful. Nor is this to be regretted, as it is now perfectly understood that the climate is unhealthy, and unfit for any settlement, so that the Spaniards themselves have neglected it.

The army, navy, revenues, political importance, and relations of Scotland, are now inseparably intermingled with those of England.

CHAP-

CHAPTER III.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE Manners and Customs of the Scots, begin to be much assimilated with those of the English. In their religious ceremonies, attending baptism and marriage, there are variations, arising from the Presbyterian form, which does not admit of godfathers or godmothers, but renders the parents alone answerable for the education of the child. The clergyman does not attend at funerals, nor is there any religious service; but generally great decency. The hearse seems a more appropriated machine than the close waggon so called in England, being a light and lofty carriage of trellice work, painted with black, and spotted with the resemblance of falling tears, an idea derived from the ancient French ceremonies, as may be observed in the collection of Montfaucon. Among the lower classes, the funerals are generally far more numerously attended than in England; nor is black an indispensable colour of dress on such occasions.

In the luxuries of the table, the superior classes rival the English, and the gentlemen are, perhaps, rather more fond of wine. The abundance and beauty of the table linen are deservedly praised by strangers: several national dishes, formerly served up at the best tables, and originating from the French cooking, in the reign of Mary, are now uncommon or neglected, such as the haggis or *hachis*; cock-a-leekie, or a capon boiled down with leeks; crapped heads, or haddocks stewed, the heads being stuffed with a kind of forced-meat balls, &c. &c. The diet of the lower classes passes in a gradual transition from the north of England. The chief food is *parich*, or thick pottage, formed with oatmeal and water, and eaten with milk, ale, or butter; in a hard lumpy form it is called *brose*. With this the labourer is generally contented twice or thrice in the day, with a little bit of meat for Sunday; nor does he repine at the bacon of the English poor, as it is a food which he commonly loathes, there being an ancient antipathy to swine, as impure animals, into which the dæmons passed, as mentioned in the New Testament. A similar antipathy prevails against eels, as they resemble a serpent, and the old serpent. The lower classes of Scotland were little given to ebriety, till a succession of improvident laws and regulations, reduced the wholesome malt liquors to mere water, when they were driven to the destructive beverage of whisky; but in general their sobriety is exemplary; and the Scotish manufacturer or labourer, instead of wasting his weekly gains at an alehouse, is ambitious to appear with his family in decent clothes, on Sundays and other holidays. This may be regarded as a striking characteristic of the Scotish peasantry, who always prefer the lasting decencies of life, to momentary gratifications. To this praise of sobriety, may be added that of intelligence, arising from the diffusion of education, which is such, that even the miners in the south possess a circulating library.

The houses of the opulent have been long erected upon the English plan, which can hardly be exceeded for interior elegance and convenience. Even the habitations of the poor have been greatly improved within these few years, and instead of the mud hovel, with

with straw, there often appears the neat cottage of stone, covered with tile or slate. Whence the ancient custom arose, of placing the dunghill in the front of the house, cannot well be imagined; perhaps it was intended in defence, and if so, is useless in pacific times; perhaps it is meant as a display of opulence, in which case it is hoped that good sense will extinguish such superfluous vanity.

The dress of the superior classes is the same with that of the English, and only waits the arrival of the fashions from London, which are conveyed by the mail-coaches with great speed. The gentlemen in the Highlands, especially in time of war, use the peculiar dress of that country. Among the other classes, the Scotish bonet is now rarely perceived, except in the Highlands; it was the usual covering for the head all over Europe, till towards the end of the sixteenth century, when the hat, formerly only worn in riding or hunting, came into general use. The Scotish peasantry are now generally cloathed in good broad cloth, worsted stockings, and strong shoes, instead of the home-spun habiliment and nudity of the lower extremities. This last singularity, common in Wales, and even in England about two centuries ago, is mostly abandoned even by the Scotish lasses, who may now aspire to the order of the garter. In the Highlands, it is to be regretted, that a distinction of dress still prevails, as any variation in dress or language only fosters prejudices, and proves the most fatal impediment to the progress of civilization. Even in these enlightened times, if any nation were to return to the state of nudity, a philosopher could hardly avoid the idea, that they were savages; and the mass of mankind would certainly consider them as such, for trifles often lead to the most serious evils.

The amusements of the rich are on a parallel with those of the English; but those of the peasantry have several diversities, which the reader may, perhaps, best learn from the poems of Burns. That of *curling* consists in rolling large stones, with iron handles, upon the ice, towards a fixed mark, a favourite and healthy diversion in the winter. The English quoits are supplied by *penny-stanes*, round flat stones, which are tossed in the same manner. Two exquisite poems of Mr. Burns, his *Halloween*, and his *Cotter's Saturday Night*, will convey more information concerning the amusements, superstitions, and manners, of the Scotish peasantry, than the most long and animated detail.

LANGUAGE.] The Scotish language falls under two divisions, that of the Lowlands, consisting of the ancient Scandinavian dialect, blended with the Anglo-Saxon; and that of the Highlands, which is Irish. A strict examination of the former, by an unprejudiced enquirer, would evince that it does not originate solely from the Anglo-Saxon, as some conceive, the mode of spelling and pronouncing numerous words, being unknown to the southern idiom: of this, among other instances, may be mentioned the *qu* of the Caledonians, an old Gothic combination, for which Ulphilas invented a letter, and for which the Anglo-Saxons used the *w*; as *quhat* for *what*, &c. But this is not the place for such discussions; and it will be sufficient to produce the usual specimen, which, in the most ancient language of the Lowlands, would be as follows:—

Uor fader quhilk beest i Hevin. 2. Hallowit weird thyne nam. 3. Cum thyne kingrik. 4. Be dune thyne wull as is i hevin sva po yerd. 5. Uor dailie breid gif us thilk day. 6. And forleit us uor skaths, as we forleit tham quha skath us. 7. And leed us na intil temtation. 8. Butan fre us fra evil. Amen.

The Islands of Orkney were seized by the Norwegians, in the ninth century, and the inhabitants retained the Norse language, till recent times, when they began to speak remarkably pure English. Chamberlayne has given the Lord's Prayer in their ancient dialect:

Favor

Favor ir i chimre. 2. Helleur ir i nam thite. 3. Gilla cosdum thite cumma. 4. Veya thine mota vara gort o yurn sinna gort i chimrie. 5. Ga vus da on da dalight broww vora. 6. Firgive vus sinna vora fin vee firgive sindara mutha vus. 7. Lyv us ye i tuntation. 8. Min delivera vus fro olt ilt. Amen; *or*, On sa meteth vera.

In the Erse, or Irish, of the Highlands, the same supplication runs thus:

A n'Athair ata air Neamh. 1. Gu naamhaichear t Tinm. 2. Tigeadh do Rioghachd. 3. Deanthar do Thoil air an Talamh mar a nithear air Neamh. 4. Tabhair dhuinn an diu ar n Aran laitheil. 5. Agus maith dhuinn ar Fiacha amhuil mar mhaitmid d'ar luehd—sia chaibh. 6. Agus na leig am buaireadh sinn. 7. Ach saor sinn o Ole. Amen.

LITERATURE.] The Literature of Scotland recompences for its recent origin, by its rapid progress, and extensive fame. The country that produced Buchanan in the sixteenth century, could not, in the twelfth, boast of one native writer; and only national vanity, or affected ignorance, would claim authors which really belong to other countries. In the thirteenth century, the native literature first begins to dawn; when Scotland, filled with a barbarous Scandinavian colony, must not in this respect be compared with the southern counties of Ireland and England, but with Scandinavia itself, with Holland, and the North of Germany, Poland, Prussia, Russia, and Hungary; in all which countries Christianity and literature are comparatively recent.

Yet, it must not be forgotten, that in the sacred ground of Hyona, flourished several respectable Irish writers, who are also classed among the apostles of religion and learning in England: such were Columba, who converted the northern Caledonians, and his biographers, Cuminius and Adomnan, the latter the friend of Bede. Among the Strathclyde Welch, may be named Patrick, in his turn the apostle of Ireland.

Independently of these, the most ancient fragment remaining of Scotish literature, is the *Chronicon Pictorum*, written by some Irish clergyman, probably a dignitary of the church of Abernethy, in the beginning of the eleventh century. Of the twelfth century there are some fragments, in the Register of St. Andrew's; and some short Chronicles published by Innes: the Chronicle of Melrose, and that of Holyrood.

One of the earliest native writers, is Thomas of Erceldon, called the Rimer, who flourished about the year 1270, and wrote a metrical romance, called Sir Tristram, lately published. The next author of note is John Barbour, Archdeacon of Aberdeen, who wrote his poem on the actions of Robert I. in the year 1375, no mean monument of industry and talents for that period. At the same time flourished John Fordun, the father of Scotish history. James I. of Scotland, wrote some excellent poems, early in the fifteenth century; and he was followed by Holland, and Henry the Rimer. In the end of that century arose Dunbar, the chief of the ancient Scotish poets; and, in the beginning of the next, Gawin Douglas, and David Lindsay. The Scotish muse continued to warble till the middle of the seventeenth century, when religious fanaticism extinguished all the arts and sciences, but not before Drummond had woven his web of Doric delicacy. In more modern times, the names of Ramsay, Thomson, Blair, Armstrong, Beattie, Burns, &c. are universally known.

Rude chroniclers continued the chain of events; but History was mute till Buchanan sounded his classical trumpet. Bishops Lesley and Burnet are not without their merit; but why repeat to the echoes of fame, the illustrious names of Hume and Robertson?

The other departments of science are of yet more recent cultivation in Scotland; even theology seems unknown till the beginning of the sixteenth century; and of medicine there is no trace till the seventeenth: while we can now boast of Blair; and Edinburgh ranks among the first medical schools of Europe. Natural philosophy and history were totally neglected till after the Restoration, yet Scotland can now produce

able

able writers in almost every branch, and equal progress has been made in moral philosophy. Among the few departments of literature, in which the Scotish authors have been unsuccessful, may be named epic poetry, comedy, and the critical illustration of the classics.

EDUCATION.] The mode of education pursued in Scotland is highly laudable; and is, perhaps, the best practical system pursued in any country in Europe. The plan which is followed in the cities, is nearly similar to that of England, either by private teachers, or at large public schools, of which that of Edinburgh is the most eminent, and may be traced from the sixteenth century. But the superior advantage of the Scotish education consists in every country parish possessing a schoolmaster, as uniformly as a clergyman: at least, the rule is general, and the exceptions rare. The schoolmaster has a small salary, or rather pittance, which enables him to educate the children, at a rate easy and convenient, even to indigent parents. It may, indeed, be computed, that a shilling will go as far in this parochial education, as a guinea in an English school. In the Highlands, the poor children will attend to the flocks in the summer, and the school in the winter. It is to be wished that the salary of that most useful body of men, the parochial schoolmasters, were moderately augmented, so as not to elevate them above their duty, but to secure them from want, or from the necessity of intermingling other labour with their important and salutary office*.

UNIVERSITIES.] The universities of Scotland, or rather colleges, (for an English university includes many colleges and foundations,) amount to no less than four; three on the eastern coast, St. Andrew's, Aberdeen, and Edinburgh; and one on the western, that of Glasgow. It would have been far preferable to have founded one on the western coast of Ross-shire, in the centre of the Highlands and Isles, that the light of science might have been diffused over these neglected regions.

The university of St. Andrew's was founded by Bishop Wardlaw, in the year 1412; but as it is now of small importance in the proximity of that of Edinburgh, it would be a patriotic measure to transfer it to the Highlands as above mentioned. That of Glasgow was founded by Bishop Turnbull, in the year 1453, and it has produced many illustrious professors and able students. The late Mr. Anderson, professor of natural philosophy, founded an institution to promote the knowledge of natural philosophy and history; and more especially the application of these sciences, to the useful purposes of commerce and manufactures[1]. It is, indeed to be wished, that practical utility, and the business of real life, were the chief intentions of a collegiate education.

The third university, that of Aberdeen, was founded by Bishop Elphinstone, in the year 1500, and it has always supported its high character and intentions. In the year 1593, George Keith, fifth Earl Marshal, founded a college at Aberdeen, being the only Scotish nobleman who can claim that high honour. The last, not least, is that of Edinburgh, founded by James VI. in 1580; and the bare enumeration of its illustrious professors and writers, would occupy too much space for the present plan. The buildings being mean and confined, the foundation of a new edifice was laid in 1789, and, it is hoped, will soon be completed on the magnificent plans adjusted by Adams.

CITIES AND TOWNS.—EDINBURGH.] The chief cities and towns in Scotland must now be considered. Edinburgh, the capital, is comparatively of modern name and note. Maitland, and other antiquaries, have fallen into miserable mistakes and misquotations, concerning the origins of this city: a passage of an old writer has been adduced for its existence in 854, while the original is completely silent. Whatever

* After this recommendation it has been augmented.

[1] Garnett's Tour, ii. 193.

may be the epoch of its existence, the earliest hint that can be applied to it, occurs in the *Chronicon Pictorum*, about the year 955, where mention is made of a town called Eden, as resigned by the English to the Scots, then ruled by Indulf. In the next century, Malcolm III. and Margaret of England, his celebrated Queen, are said to have resided in the castle; but her life by Turgot, omits this circumstance, and Holyrood house was the foundation of the first David. But Scotish antiquities have been treated with such inaccuracy, that crude notions are perpetually substituted, instead of that exact knowledge which is to be found in those of other countries.

The population of Edinburgh, including the port of Leith, was, in 1678, computed at 35,500; in 1755, at 70,430; and in 1791, at 84,886[2]. It is probable the present population falls little short of 90,000. The arrivals and clearances at Leith Harbour, exceed the number of 1700 vessels of various descriptions, ships, brigs, and sloops. Of these 165 belong to the town: the commerce has been stated at half a million annually.

The houses in the old town of Edinburgh, are sometimes of remarkable height, not less than thirteen or fourteen floors, a singularity ascribed to the wish of the ancient inhabitants, of being under the protection of the castle. This part of the city stands on the ridge of a hill, gradually descending from the lofty precipice on which the castle is situated, to a bottom, in which stands the palace of Holyrood-house. Adjacent to this edifice, is a park of considerable extent, replete with mountainous scenery; for the basaltic heights of Arthur's seat, and Salisbury crags, are within its precincts. The new town of Edinburgh is deservedly celebrated for regularity and elegance, the houses being all of free-stone, and some of them ornamented with pillars and pilasters. Brick, is, indeed, almost unknown in Scotland; and is apt to impress the Scotish traveller with the ideas of slightness, and want of duration. There are several public edifices in Edinburgh, which would do honour to any capital; among such may be named the castle, the palace, the principal church, Heriot's hospital, the register-office, the new college, and several buildings in the new city[3]. There is an elegant bridge, reaching from the hill on which the ancient city stands, to the elevated site of the new town. Another bridge passes in a line with the former, towards the south, over a street called the Cowgate; and an artificial mound extends from the western part of the ridge, to the opposite hill. The environs of Edinburgh are singularly pleasing and picturesque. On the north is an elevated path, leading to the harbour of Leith: on the east are Mussleburgh and Dalkeith, rural villages, watered by a beautiful stream. On the south, Pentland-hills; and towards the west, the rivulet Leith, with banks of romantic variety.

GLASGOW.] The second city in Scotland is Glasgow, of ancient note, and ecclesiastic story, but of small account in the annals of commerce, till the time of Cromwell's usurpation[4]. The population of Glasgow, in 1755, was computed at 23,546, including the suburbs: the number in 1791, was estimated at 61,945. The ancient city was rather venerable than beautiful, but recent improvements have rendered it one of the neatest cities in the empire. Its western situation exposes it to frequent rains, a disadvantage recompensed by its favourable position for commerce with America and the West Indies. Its commerce has arisen to great extent since the year 1718, when the first ship that belonged to Glasgow crossed the Atlantic[5]. The number of ships belonging to the Clyde, in 1790, was 476, the tonnage 46,581; but, before the American war, it was supposed to have amounted to 60,000 tons. Though the manufactures scarcely exceed half a century in antiquity, they are now numerous and important[6]. That of cotton, in 1791, was computed to employ 15,000 looms; and

[2] Statist. Account, vi. 564. [3] Arnot's Edinburgh. Kincaid's Do. [4] Denholme's Glasgow.
[5] Statist. Account, v. 498. [6] Ib. 502.

the goods produced, were supposed to amount to the yearly value of 1,500,000*l.*; the manufactures of linens, woollens, &c. are far from being of similar consequence. The ancient cathedral of Glasgow survived the reformation, when the other Scotish edifices of that denomination sunk into ruins. Two convenient bridges are thrown over the Clyde. The environs of Glasgow present little remarkable.

PERTH.] Next in eminence are the cities of Perth and Aberdeen, and the town of Dundee. Perth is an ancient town, supposed to have been the Victoria of the Romans, but the fables concerning Bertha are beneath notice[8]. It is pleasantly situated on the western bank of the river Tay; and has been known in commerce since the thirteenth century, but at present the trade is chiefly of the coasting kind, Dundee possessing a more advantageous situation for foreign intercourse. Linen forms the staple manufacture, to the annual amount of about 160,000*l.* There are also manufactures of leather and paper. Perth displays few public edifices worth notice. Inhabitants about 28,000. There is a noble bridge, of recent date, over the Tay, and the environs are interesting, particularly the hill of Kinnoul, which presents singular scenes, and many curious mineral productions[9].

DUNDEE.] About eighteen miles nearer the mouth of the Tay, stands Dundee, in the county of Angus, a neat modern town. The firth of Tay is here between two and three miles broad; and there is a good road for shipping to the east of the town, as far as Broughty castle. On the 1st of September 1651, Dundee was taken by storm by General Monk; and Lumisden, the governor, perished amidst a torrent of bloodshed. The population is, however, now computed at 24,000; the public edifices are neat and commodious. In 1792, the vessels belonging to the port amounted to 116, tonnage 8,550. The staple manufacture is linen, to the annual value of about 80,000*l.* canvass, &c. about 40,000*l.* Coloured thread also forms a considerable article, computed at 33,000*l.* and the leather tanned at 14,000*l.*[10]

ABERDEEN.] Aberdeen first rises to notice in the eleventh century, and continued to be chiefly memorable in ecclesiastic story. In the fourteenth century it was destroyed by Edward III. of England. The population, in 1795, was computed 24,493. Though the harbour be not remarkably commodious, it can boast a considerable trade, the chief exports being salmon and woollen goods. In 1795, the British ships, entered at the port, were sixty-one, the foreign five; and the British ships cleared outwards, amounted to twenty-eight. The chief manufactures are woollen goods, particularly stockings, the annual export of which is computed at 123,000*l.* The coarse linen manufactures are not of much account; but the thread is of esteemed quality.

BERWICK.] The other chief towns of Scotland shall only be briefly mentioned, beginning with the south-east part of the kingdom. Berwick is a fortified town of some note, and carries on a considerable trade in salmon. The vessels built at this port, are constructed on excellent principles.

JEDBURGH.] Jedburgh, on the river Jed, which descends from the Cheviot-hills, is chiefly remarkable for the beautiful ruins of an abbey, founded by David I. In the year 1523, it was burnt by the Earl of Surrey, who says that it then contained twice as many houses as Berwick, many of them elegantly built; and it was defended by six strong towers.

DUMFRIES.] Dumfries stands on a rising ground, on the eastern banks of the Nith, and contains about 6000 inhabitants.

AYR.] Ayr, the chief town in the S. W. of Scotland. is situated on a sandy plain, on a river of the same name. The chief trade is in grain and coals; and a few vessels are built. Inhabitants about 7000. Irwin has about 4000.

[8] Statist. Account, xviii. 489, &c. [9] Anderson's Muses Threnodie. [10] Statist. Account, p. 204, &c

LANARK.]

LANARK.] Lanark stands in a most picturesque country, near the celebrated falls of the Clyde. It was only noted for its academy, under the management of Mr. Thomson, brother-in-law of Thomson the poet, till the recent cotton manufacture, and other erections by the patriotic Mr. Dale, rendered this town still more worthy of attention.

GREENOCK.] Greenock and Port Glasgow, are considerable towns, which have arisen to celebrity, by sharing in the trade of Glasgow. Greenock is supposed to contain 15,000 inhabitants; Port Glasgow about 4000. Paisley, in the same county, is celebrated by its manufactures of muslin, lawns, and gauzes, to the annual amount, it is said, of 660,000*l.* The population amounts to about 20,000. Kilmarnoc has also become a considerable town. Dunbarton, on the northern shore of the Clyde, contains above 2000 souls, and is also subservient in the manufactures of Glasgow.

STIRLING.] Stirling is rather remarkable for its commanding, and truly royal situation, than for its industry. The inhabitants are computed at 5,000. Between Stirling and Edinburgh stands Boness, formerly colled Borrowstowness, in the midst of collieries and salt-works; the harbour is good, and there are about 2,600 inhabitants.

DUNFERMLINE.] The county of Fife contains many towns, some of which were in a more flourishing situation, when Scotland carried on a considerable intercourse with France. Dunfermline is a pleasant town, containing about 5,000 inhabitants, and carries on a valuable manufacture of diapers. There are ruins of a palace, the royal residence in the time of Malcolm III. St. Andrew's has about 2,500; it is chiefly remarkable for its ruined cathedral.

Forfar, in Angus, contains about 3400 souls, and the linen manufactures deserve mention.

DUNKELD.] Dunkeld is of venerable and picturesque fame, but its linen manufactures are inconsiderable. Brechin contains about 5000 people: its products are linen, cotton, and tanned leather. Montrose has an equal population, and a few manufactures; the buildings are mostly modern and neat.

The county of Mearns presents no town worth mention. Peterhead, in Aberdeenshire, contains about 2000 souls. It has a mineral spring, and carries on some trade with the Baltic. Frazerburgh, near the promontory of Kinnaird Head, has also a tolerable harbour.

PORTSOY.] Portsoy is a sea-port town, peopled with about 2000 souls. In the neighbourhood, are the rocks well known to mineralogists, containing elegant granites, of different kinds, serpentines, and steatites, with their usual concomitants, asbestos and amianthus.

ELGIN.] Elgin, the capital of the county of Moray, boasts of the remains of an elegant cathedral, and is supposed to contain 4000 inhabitants.

INVERNESS.] Inverness is an ancient and flourishing town, the capital of the northern Highlands. The population is computed at 10,000. The chief manufactures are ropes and candles. An academy has lately been founded here on an excellent plan.

The few towns further to the north are of little account. Port Rose has only 800 souls; but Cromarty has about 3000, a small manufacture of coarse cloth, and some coasting trade in corn, thread, yarn, nails, fish, and skins. Dingwall contains 700 souls, and a small linen manufacture. Tain has about 1000 inhabitants. Dornoch was once the residence of the Bishops of Caithness: population only 500. After a dreary interval Wick occurs, the last town on the eastern coast; the inhabitants, about 1000, chiefly deal in cod and herrings.

Thurso, on the northern shore, fronting the Orkneys, has manufactures of woollen and linen. Population about 1600.

INVERARY.] Hence there is a lamentable void along the western half of Scotland, till we arrive at Inverary, in Argyleshire, the foundation of the noble house of Argyle, after passing a space of about 160 miles, where only a few scattered hamlets can be found*. Inverary is a neat and pleasant town of about 1000 souls; there are manufactures of linen and woollen, and a considerable iron-work. The ore is brought from the west of England, and is smelted with charcoal from the woods of Argyleshire.

CAMPBELTOWN.] In the same county is Campbeltown, a royal borough, in the southern part of the peninsula of Cantire. The trade is considerable, as it is the general resort of the fishing vessels; and the inhabitants are computed at about 5000. The harbour is excellent, in the form of a crescent, opening to the east, in front of the island of Arran. About fifty weavers are employed in the cotton manufacture[11].

EDIFICES.] Scotland abounds with remarkable edifices, ancient and modern. Those of the capital have been already mentioned. In its vicinity is Hopeton-house, the splendid residence of the Earl of Hopeton; Dalkeith Palace, a seat of the Duke of Buccleugh; Newbottel, the seat of the Marquis of Lothian; Melville Castle, the elegant villa of the Right Hon. Henry Dundas; and the splendid mansion of the Marquis of Abercorn. Nor must Pennicuik, the seat of the family of Clerk, be omitted; but the traveller of taste would be more interested in Hawthornden, the ancient seat of Drummond the poet. It would be vain to attempt a similar enumeration for the other counties, and only a few of the most remarkable shall be mentioned; such as in the south, the Duke of Roxburgh's, near Kelso; Mount Teviot, a seat of the Marquis of Lothian; Minto Tower, Lord Minto's; Lauder Castle, Marchmont, near Polwarth, both in the Merse; the Duke of Queensberry's, at Drumlanrig; Lord Douglas's villa, at Bothwell; and Hamilton Palace, near Hamilton. The county of Ayr contains many beautiful edifices belonging to the nobility and gentry, among which may be mentioned Loudon house, the seats of the Earls of Loudon; Dundonald that of the Cochrans, Earls of Dundonald, and Colaine Castle, the seat of the Earl of Cassilis, designed by Adams, in 1789. Wigtonshire has Culhorn, the seat of the Earls of Stair, and Castle Kennedy; Galloway House, Merton, &c. In the vicinity of the flourishing city of Glasgow, it may be imagined that the villas must be numerous and elegant; and even the small island of Bute can boast of Mount Stuart. The Castle of Dunbarton is another remarkable edifice in this region.

On passing the Forth, the rich county of Fife presents many interesting edifices, such as Leslie castle, the seat of the Earls of Rothes; Wemyss, Kelly, and Balcarras, the seat of the Earls of those titles; the house of Kinross, built by Sir William Bruce, &c. &c. Perthshire contains Tullibardin and Blair, the seats of the Duke of Athol; Dupplin, that of the Earl of Kinnoul; Drummond, the residence of Lord Perth; Taymouth, the splendid mansion of the Earl of Braidalban; Scone, a royal palace. In Angus we find Panmure, the ancient residence of the Earls of Panmure; Athie, that of the Earls of Northesk; and Kinnaird, of the Earls of Southesk; Glammis, the venerable seat of the Earls of Strathmore. The shire of Mearns, or Kincardine, contains Dunotter castle, the elevated mansion of the Earls Marshall, &c. Aberdeenshire presents Castle Forbes, Philorth, and Haddo; in Bamfshire we find Cullen House, the interesting seat of the Earl of Finlater; Duff house, that of the Earl of Fife; Gordon Castle, a beautiful mansion of the Duke of Gordon; in the county of Moray, Tarnaway castle, the seat of the Earl of Moray;

* The fishing stations of Tobermory and Steen have declined, because land was given to the settlers. Lord Selkirk on the Highlands, p. 99.—It is much to be regretted that a city is not founded, for the want of a market is a radical obstacle. Settlers might be allured by exemption from taxes, freedom from arrest for debts, &c. [11] Satist. Account, x. 552.

Inverness presents Fort George, a military erection of some note, about twelve miles to the east of Inverness. The line of forts is continued through the centre of the country, by Fort Augustus, at the further end of Loch Ness, and Fort William, at the northern extremity of Loch Linny, at the bottom of the lofty Bennevis. In the county of Ross, on the north of Dingwall, is Castle Leod, a seat of the Earls of Cromarty: New Tarbet, and Balnagowan, command the Firth of Cromarty. At Dornock and Dunrobin, are seats of the Earls of Sutherland. The shore of Caithness displays many ancient castles, but the modern edifices are few: the patriotic Sir John Sinclair has a pleasing residence near Thurso; and in the north-west extremity of Scotland, Lord Reay has two mansions, one near Tong, and another at Durness, with an extensive wild of rocks, interspersed with morasses, called Lord Reay's forest. The western coasts of Scotland present an enormous void, till Inverary, the splendid mansion of the Dukes of Argyle, rises like some oriental vision in the wilderness.

INLAND NAVIGATION.] The most remarkable inland navigation in Scotland, is the excellent and extensive canal from the Forth to the Clyde. Mr. Smeaton's first survey was presented in 1764; but four years elapsed before the act of parliament was passed for its execution, and the canal was begun in the same year with the act[12].

"The dimensions of this canal, though greatly contracted from the original design, are much superior to any work of the same nature in South Britain[13]. The English canals are generally from three to five feet deep, and from twenty to forty feet wide, and the lock gates from ten to twelve feet; but they answer the purpose of inland carriage from one town to another, for which alone they were designed. The depth of the canal between the Forth and Clyde, is seven feet; its breadth at the surface fifty-six feet; the locks are seventy-five feet long, and their gates twenty feet wide. It is raised from the Carron by twenty locks, in a tract of ten miles, to the amazing height of 155 feet above the medium full sea-mark. At the twentieth lock begins the canal of partition on the summit, between the East and West Seas; which canal of partition continues eighteen miles, on a level, terminating at Hamilton-hill, a mile north-west of the Clyde, at Glasgow. In some places the canal is carried through mossy ground, and in others through solid rock. In the fourth mile of the canal there are ten locks, and a fine aqueduct bridge, which crosses the great road leading from Edinburgh to Glasgow. The expence of this mile amounted to 18,000*l*. At Kirkintulloch, the canal is carried over the water of Logie, on an aqueduct bridge, the arch of which is ninety feet broad, and was built at three different operations, of thirty feet each, having only one centre of thirty feet broad, which was shifted on small rollers, from one stretch to another. Though this was a new thing, and never attempted before with an arch of this size, yet the joinings are as fairly equal as any other part of the arch. The whole is thought to be a capital piece of masonry. There are in the whole eighteen draw bridges, and fifteen aqueduct bridges, of considerable size, besides small ones and tunnels."

The supplying the canal with water, was of itself a very great work. One reservoir is above twenty-four feet deep, and covers a surface of fifty acres, near Kilsyth. Another, about seven miles north of Glasgow, consists of seventy acres, and is banked up at the sluice, twenty-two feet.

The distance between the firths of Clyde and Forth, by the nearest passage, that of the Pentland Frith, is 600 miles, by this canal scarcely 100. On the 28th of July, 1790, the canal was completely open from sea to sea, when a hogshead of the water of Forth was poured into the Clyde, as a symbol of their junction. The length of the canal is precisely thirty-five miles, and no work of the kind can be more ably finished.

[12] Phillips, 276. [13] Ibid. 316.

Another

Another laudable plan was to conduct a canal from Fort William to Inverness, than which nothing could contribute more to improve the Highlands. The space to be cut would not be considerable, but the times are unfavourable to such a design*. The canal of Crinan, which will save a troublesome navigation around Cantire, is actually begun, and is hoped will speedily be completed, when vessels could pass at once from the Clyde to the north of Jura. Could a canal be opened from the Firth of Dornoch, and Loch Shin, into the bay of Calval, in Assynt, perhaps every thing of this kind would be accomplished, that can be executed in the Highlands.

MANUFACTURES AND COMMERCE.] The general commerce of Scotland, though on a smaller scale, and with smaller capitals, is in most respects similar to that of England, and shares in the national prosperity. That of the capital, through Leith, its port, has been estimated, as we have seen, at half a million yearly†. The chief exports are linen, grain, iron, glass, lead, woollen stuffs, soap, &c. &c. The imports are wines, brandy; and from the West Indies and America, rum, sugar, rice, indigo. Glasgow exports cottons of all kinds, muslins, lawns, gauzes, &c.; glass, stockings, earthen-ware, cordage, &c.; candles, soap, iron, leather, &c. &c. The chief imports are tobacco, sugar, rum and cotton, from the West Indies; Irish beef, butter, and linen; wines from Portugal, and other countries. The fisheries of Scotland, if carried to a proper extent, would furnish a very considerable store of merchandize.

The chief manufactures of Scotland are linen of various kinds, to the amount, it is said, of about 750,000*l.* annually. Of woollens, the Scotish carpets seem to form the chief branch. The iron manufactures, particularly that at Carron, deserve also to be enumerated among the chief national advantages.

As the necessary progress of manufactures and commerce is from the south to the north, owing, among other causes, to this, that the prices of food and labour are smaller in the north than in the south, it is to be expected, and indeed wished, for the general benefit of the British empire, that the trade which has passed from Bristol to Liverpool and Glasgow, may gradually enliven and invigorate, even the Western Highlands and islands of Scotland. Some few of the gentlemen in the Highlands, seem to object to the propagation of industry, as tending to deprive them of their ancient respect, and the reminiscence of feudal power; but this infatuation cannot continue, as it must soon be perceived, that to diffuse a spirit of industry among their tenants, is the only infallible mode of increasing their own revenues.

* This canal has actually been begun, and upon a plan which does honour to the spirit of the times, being such as to bear frigates of twenty cannons, or ships of thirteen hundred tons. The House of Commons has voted fifty thousand pounds, but it is supposed that the expence will be four hundred thousand.

† In 1793, the Scotish exports were computed at 1,024,724*l.* Chalmer's Estimate, p. lxxv. edit. 1794. The ships employed were 2,234. Ib.

CHAP.

CHAPTER IV.

Climate and Seasons. — Face of the Country. — Soil and Agriculture. — Rivers. — Lakes. Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Scotland is such as might be expected in a latitude so remote, and a country so mountainous. In the eastern parts, there is not so much humidity as in England, as the mountains on the west arrest the vapours from the Atlantic. On the other hand, the western countries are deluged with rain, an additional obstacle to the progress of agriculture; indeed, the chief obstacle; for the example of the Swiss evinces, that industry can overcome even mountains; but the climate of Swisserland is dry and pleasant, and no toil can guard against the excess of falling moisture. Even the winter is more distinguishable by the abundance of snow, than by the intensity of the frost; but in summer the heat of the sun is reflected with great power in the narrow vales between the mountains, so as sometimes to occasion a phœnomenon of glittering particles, that seem to swim before the eye. These observations chiefly apply to the north and west. In the east and south the climate differs but little from that of Yorkshire; and corn sometimes ripens in the vales of Moray, as early as in Lothian.

FACE OF THE COUNTRY.] The face of the country is in general mountainous, to the extent, perhaps, of two-thirds; whence the population is of necessity slender, in comparison with the admeasurement. But the name of Highlands is more strictly confined to Argyleshire, the west of Perthshire, and of Inverness; and the entire counties of Ross, Sutherland, and Caithness. In proceeding from the south-east, the entrance into the Highlands near Dunkeld, is very impressive, there being a considerable tract of plain, just before what may be termed the gates of the mountains. Even the eastern parts have little of uniform flatness, but are sweetly diversified with hill and dale. What in England is called a hill, would often in Scotland be regarded as a mere slight rise in the road. The rivers in general are remarkably pure and transparent, and their course rapid. The rich roughness of an English prospect, diversified with an abundance of wood, even in the hedge-rows, is in Scotland rarely visible; whence the nudity of the country makes a strong impression on the stranger. But the laudable exertions of many of the nobility and gentry, who plant trees by millions, will soon remove this reproach. The maritime gales are noxious to such plantations, but it has been recently discovered in France, that there is a common tree (the name is unfortunately forgotten) which will remain unhurt, even on the beach; and if a thick skreen be first formed of this tree, and suffered to attain some maturity, other denominations will prosper under its protection[1].

SOIL AND AGRICULTURE.] For a minute account of the various soils that prevail in Scotland, and the different modes of agriculture, the reader must be referred to the Statistical Accounts, published by Sir John Sinclair. The excellence of the English agriculture, has justly entitled it to an imitation, almost universal; but this advantage is of recent date; and, for a long period of time, Scotland was remarkable for pro-

[1] Another useful plan is to sow or plant the seeds and trees very thick, or to sow them with heath, as in Mecklenburg. The sycamore will bear the sea-spray.

ducing

ducing the best gardeners, and the worst farmers in Europe. The superior advantages of great, or of small farms, have been recently discussed with much care, as the importance of the subject demands. It would seem, that for the first great improvement of a country, the farms should be large, that the farmer may have a sufficient capital to make experiments, and discover the most productive crops, or those most suited to the nature of the soil. When lasting examples have thus been instituted, it is certainly more advantageous for the community, that the farm should be restricted to a small or moderate size.

RIVERS.—FORTH.] The three chief rivers of Scotland, are the Forth, the Clyde, and the Tay. The chief source of the Forth is from Ben Lomond, or rather from the two lakes, Con and Ard: the stream of Goudie soon joins it from the lake of Mentieth; and the river Teith, fed by the lakes Ketterin, Lubnaig, and others, swells the Forth to a noble stream, about four miles above Stirling.

The Clyde is said to issue from a hill in the south-east corner of Tweeddale, called Arrik Stane, which is undoubtedly the chief source of the Tweed, and one source of the Annan: but the Clyde has a more remote source in Kirshop, or Dair water, rising about six miles further to the south, in the very extremity of Lanarkshire; and the true source of the Annan seems to be Loch Skeen, in the county of Selkirk. However this be, the Clyde passes through Crauford Moor, leaving the range of Leadhills on the left, and winding under the lofty hill of Tinto, near Symington, pursues a northerly course, till about two miles to the south of Carnwath, when it assumes its chief westerly direction.

TAY.] The principal source of the Tay, is the lake of the same name, or the river may be traced to the more westerly sources of the Attrick and the Dochart, and the smaller stream of Lochy, which fall into the western extremity of Loch Tay. Soon after this noble river issues from the lake, it is joined by the river Lyon; and, at no great interval, by the united streams of the Tarf, the Garry, and the Tumel, the last a rapid and romantic river. The streams of Ericht and Ilay, swell the Tay, about nine miles to the north of Perth; after passing which city, it receives the venerable stream of the Ern, and spreads into a wide estuary.

TWEED.] Next in consequence and in fame is the Tweed, a beautiful and pastoral stream, which, receiving the Teviot from the south, near Kelso, falls into the sea at Berwick.

The Scotish Tyne is an inconsiderable river, which runs by Haddington.

ANNAN.] In the south-west, the Annan contributes largely to the Frith of Solway, but no town worth mentioning adorns its banks. Dumfries stands upon the Nith, a river of longer course than the Annan, and marked at its estuary by the ruins of Carlaveroc Castle, an important fortress in ancient times. The river Ore, and that recently styled Kirkcudbright, anciently and properly called the Ken, (whence is derived the title of Kenmure,) and the Fleet, are surpassed by the river Cree, or Crief; which formerly split Galloway into two divisions, and which opens into the noted bay of Wigton.

The rivers of Ayrshire, flowing into the grand estuary of the Clyde, are of inconsiderable size.

EDEN.] To the north of the estuary of Forth, occurs the Eden, which, after watering the royal park of Falkland, and Coupar, the county town, meets the ocean, about two miles to the north of St. Andrews.

To the north of Tay are the South Esk, which passes by Brechin and Montrose; and the North Esk, a less considerable stream, but both impart titles to Earls.

DEE.] In the county of Kincardine there is no river of consequence. But the Dee is a considerable and placid stream, issuing from the mountains of Scairsoch, and pursuing

suing a due easterly course to Aberdeen. The Don runs almost parallel, a few miles to the north, joining the sea about two miles from Aberdeen, after passing Old Aberdeen, or rather, in the old orthography, Aberdon.

A few miles to the north of the Don, the river Ythan falls into the German ocean, a stream formerly celebrated for its pearl fisheries, of which some relics remain. The Uggie is the last stream of any consequence in Aberdeenshire.

The following rivers direct their course to the north. The Devon joins the sea at Banf. The Spey is a grand and impetuous river, rising from a small lake, called Loch Spey, in the vicinity of the high mountain of Corriarok, near Fort Augustus, whence it rolls to the south-east, amid mountainous wilds, till it suddenly turns to its fixed direction, the north-east, being, perhaps, upon the whole, the most considerable Alpine river in Scotland.

The water of Lossie is only remarkable, as it washes the venerable remains of Elgin; but Findorn, which runs by the Forres of Macbeth and Shakespeare, is a considerable torrent.

NESS.] The Ness, issuing from the lake so called, and the Beuly, conspire to form the large estuary, called Murray Firth; while that of Cromarty is formed by the Grady, the Conon, and other streams.

The estuary of Dornoch is formed by a river which issues from Loch Shin, by the Caran, and by the intermediate stream, called Okel.

The other streams in the furthest north of Scotland, are unhappily of small consequence. The water of Thurso, and that of Naver, are the chief. In the north-west extremity are the Strathmore, the Strathbeg, and the Durness, which enters the sea to the east of the stupendous promontory of Cape Wharf, now modernized Wrath.

WESTERN INLETS.] On the west of Scotland there is no river of any moment; but the defect is compensated by numerous lakes, or rather creeks, of which the most considerable are Laxford, Calva, Ennard, and that of Broome, which forms a noble bay, studded with islands, nearly parallel with the bay of Dornoch. On its shore is the projected settlement of Ullapool, to which every patriot must wish success*. Next are the En and the Gare, the Torridon, the Kessern, and others of smaller note. Argyleshire exhibits the Sunart, a long inlet, which terminates at Strontian; and the Linny, extending to Fort William. The Etif is impeded by a singular cataract, at its entrance into the sea. The small inlet of Crinan attracts observation, by the promised canal; and the list is closed by Loch Fyne, and Loch Long, forming vast inlets from the estuary of Clyde.

LAKES.] Among the lakes of Scotland, the chief in extent and beauty is that of Lomond, studded with romantic islands, and adorned with shores of the greatest diversity. The isles are supposed to form part of the Grampian chain, which here terminates on the west. The depth of this lake in the south, is not above twenty fathoms; but the northern creek, near the bottom of Ben Lomond, is from sixty to eighty fathoms. At the time of the earthquake in Lisbon, 1755, the waters were agitated in a singular manner.

KETTERIN, &c.] On the east of Lomond is an assemblage of curious lakes, the Ketterin, or Cathein, the Con, or Chroin, the Ard, the Achray, or Achvary, the Vanachor, the Lubnaig; exhibiting singular and picturesque scenes, called by the Highlanders the *Trosachs*, a word signifying rough, or uneven grounds[2]. This denomination is strictly applicable to the surrounding hills, and rocks, of distorted forms, as if some convulsion had taken place; but often covered with heath, and ornamented, even to the summits, with the weeping birch. The hills are of argillaceous schistus; in other

* Loch Broom extends about twelve miles into the country, and is surrounded with mountains of marble and lime stone. Knox. ii. p. 465.

[2] Garnett's Tour, ii. 173.

words, in strata of coarse slate, mostly vertical, and interspersed with veins of quartz. Ketterin, or Cathein, is a lake of considerable extent and beauty, with some rocky isles, and crowned by the mountain of Ben Veney; the fish are trout and char. Vanachor has salmon and trout; but Achray only pike, tyrants without subjects. The Con, the Ard, and Lubnaig, have not been celebrated by tourists.

MENTIETH.] In the vicinity is the lake of Menteith, a beautiful small lake, about five miles in circumference, with two woody isles, one presenting the ruins of a monastery, the other those of a castle of the old Earls of Menteith.

Having thus briefly described the principal lake, and some others in its vicinity, it may be proper to observe, before proceeding to others in a more northerly situation, that the south-west region of Scotland, anciently called Galloway, contains several picturesque lakes, (which, in Great Britain and Ireland, seem always to accompany groupes of mountains,) though not of equal extent and celebrity with those of the north. The most considerable is the lake of Ken, in the county of Kirkudbright, on which stands a village, called New Galloway. This lake is decorated with three small isles. Next is that of Crey, on the borders of Wigtonshire. In the county of Ayr there is a small lake, called Loch Dolen.

Returning towards the north, Loch Leven, in Fifeshire, attracts observation from its historical fame. The lakes in the south of Perthshire, have been already mentioned, and to the east must be added Loch Ern, Loch Tay, and those of Rannoch, Lydoch, and Ericht. That of Tay, in particular, is a grand and beautiful expanse of water, of such length, as rather to resemble a noble river; and at its eastern extremity, are placed the capital mansion and plantations of the Earl of Braidalbin. Those more to the north of this county, may present many yet unseen and unknown beauties.

LOCH NESS.] Loch Ness rivals Loch Tay in extent and reputation. This lake was also affected at the time of the earthquake at Lisbon. The depth is from 60 to 135 fathoms: the fish, excellent trout[3]. Its great depth is the cause why it never freezes. It is remarkable that the bed of this lake, and in general the watery chain which extends to Loch Linney, is filled with farcilite, or pudding-stone, hills of which occur near Dunolla and Dunstaffnage, on the western shores of Argyle. The counties of Sutherland and Caithness, contain many small lakes. The chief are Loch Loil, which sends a stream into the bay of Far: and Loch Shin, a considerable lake, in a country little known or visited. According to the description of Mr. Cordiner[4], it is a charming piece of water, of great extent, winding among the hills, with woods often stretching down to the shores. It is said to be twenty miles in length, but the eye can only command a few miles at a time. From its south-east extremity issues the river Shin, in two broad cascades, from the sides of a small island. Mr. Cordiner adds, that by a singular error in Dorret's map, the distance from Larg church, on the south-east of Loch Shin, to Moasdale, south of Loch Naver, measures only five miles, while by computation in travelling, there are at least eighteen. But Dorret's map, though valuable for the time, is stained with numerous and gross errors; and Loch Naver lies almost due north of Shin, instead of due east.

Many of the lakes in the western division of Scotland, have been already mentioned under their proper description, as creeks or bays. Among a few others which deserve notice, may be named Loch Fainish, a considerable lake in Ross-shire; the lakes Lochy and Laggen, in the county of Inverness. Lock Awe, in Argyleshire, is the most considerable lake in the west of the Highlands; it is about thirty miles in length, and from one to two in breadth: and is studded with many small, woody isles, one of which bears the ruins of a monastery, and another those of an ancient fortress, the residence

[3] Pennant's Tour. [4] Letters to Mr. Pennant, London, 1780, Quarto, p. 117.

of

of the Campbells of Lochawe, afterwards Dukes of Argyle. This lake empties itself, by a considerable stream, near its northern end, into the creek, called Loch Etif.

MOUNTAINS.] But the chief distinctive feature of Scotland consists in its numerous mountains, which intersect the country in various directions. In the south-west, the ancient province of Galloway presents an extensive assemblage of hills, which seldom describe any uniform chain, from the bay of Glenluce, which extends towards Loch Ryan, and thence in a north-east direction to Loch Doon, the source of the river Doon, which joins the sea near Ayr. Other ridges run in various directions, generally north and south, according to the course of the rivers, till we arrive at the Nith, near which is Cruffel, a detached summit, of considerable height. Accordiug to General Roy, than whom there cannot be a better authority, the mountains of Galloway form a connected chain with those of Cheviot, on the north-east.

But the chief elevation of this part of Scotland, is that metalliferous ridge in its very centre, called the Lead Hills, &c. whence many rivers descend in all directions to the sea. The small stream of Elvan conveys particles of gold to the Clyde, and German miners are said to have discovered considerable quantities of that precious metal. The chief summit of that ridge is Hartfell, which, according to some accounts, is 3300 feet above the level of the sea; but by others 2582. Cruffel is only 2044. Not far to the north is Tinto, a remarkable solitary mountain; and Queensberry-hill is about the same elevation. Loudon-hill, in Ayrshire, is little memorable; but on returning to the east, we find the uniform ridge of Lamermoor, terminating in St. Abb's-head. The hills of Pentland, on the south of Edinburgh, are rather picturesque than important. Berwick Law, and the romantic summits in the vicinity of Edinburgh, close the list of the southern hills. The lead-hills chiefly consist of argillaceous schistus; but the grey granite abounds in the mountains of Galloway. In all, however, the chief portion seems to be calcareous; the summits are round, some verdant, others covered with heath. The red granite, and other grand Alpine rocks seem here unknown*. In the Lothians, the calcareous strata support vast masses of whin, trap, and basalt, which extend to the northern shore of the firth of Forth. On the east and west of Inverkeithing, are whin and columnar basalt[5]; the latter also occurring at Dichmont-hill, near Rutherglen, in Lanarkshire, and at Dunbarton.

OCHILL.] On passing the Forth, appears the range of Ochill-hills, more remarkable for their singular agates and calcedonies, than for their height; and to finish the account of the Lowland hills, must be added those of Kinnoul and Dunsinnan, in the east of Perthshire, and a small range in Angus. In the county of Kincardin, the great chain of the Grampians terminates. On the north-east of Aberdeenshire, is Mormond, a remarkable solitary summit; from whence no mountains of note occur till Inverness, on the west, opens the path to the Highlands. Yet, it must not be forgotten, that from the lofty promontory of Trouphead to Portsoy, extend vast masses of beautiful red granite, interspersed with schorl; and of serpentine with steatites, and other valuable stones. The cape called Kinnaird-head, near Frazerburgh, presents curious micaceous schistus; but the eastern shore offers nothing worthy of remark. Before leaving the Lowland-hills, it may be observed that the small ridge in Fifeshire, between the Eden and Leven, called Loman-hills, consists mostly of hard free-stone, with superincumbent strata of whin and basalt; while that separating the plain of Kinross from Strathern, is on the south side whin, and on the north toad stone, with calcareous spar, and steatites. Soon after occur the Alpine rocks of siliceous and micaceous schistus[6]. In general, the observation of Saussure is applicable, that mountains gradually rise from the calcareous to the micaceous, and thence to the granite.

GRAMPIAN HILLS.] The Grampian hills may be considered as a grand frontier

* Cruffell is, however, red granite, as is the inclosure wall of the adjacent abbey of Sweet Heart. Mr. Cadell's MS. Notes. [5] Mr. Aikin's MS. Notes. [6] Aikin's Notes.

chain, extending from Loch Lomond to Stonehaven, and forming the southern boundary of the Highlands, though four or five counties on the north-east of that chain, have, in their eastern and northern parts, the name and advantage of Lowlands. The transition to the Grampians is gradual, the first chain, according to General Roy, consisting of the Sadley-hills on the east, the Ochills in the middle, and Campsy-hills on the west. To the Grampian chain belongs Ben Lomond (3262); Ben Ledy (3009); Ben More (3903): Ben Lawres, the chief summit (4015); Shihallion (3564); Ben Verlich (3300); and other less important elevations on the east. Mount Battock, in Kincardinshire, is 3465 feet. Ben Cruachan, in Argyleshire, is a solitary mountain, of 3300 feet above the sea.

Ben Nevis.] Ben Nevis is the highest mountain in Great Britain, being estimated at 4350 feet above the level of the sea, not much above a quarter of the height of Mont Blanc. This mountain has not hitherto been explored by any mineralogist. On the north-east side it presents a precipice, nearly perpendicular, and of prodigious height, by some accounts 1500 feet. The view from the summit is grand[7], exhibiting most of the western Highlands, from the Paps of Jura, to the hills of Cullen in Skey; on the east it extends to Ben Lawres, in Perthshire, and the river Ness; extent of view about eighty miles. The superior half of the mountain is almost destitute of vegetation. The summit is flat, with a gentle acclivity, and forms an easy pavement, probably of granite. Snow remains in the crevices throughout the year; but here are no glaciers, nor other magnificent alpine features.*

It would be difficult to divide the remaining mountains of the Highlands into distinct lines or groupes; they shall therefore be briefly mentioned in the order of proximity. To the north-west of Ben Nevis is the long mountain of Corriarok, near Fort Augustus, over which a military road has been directed, in a zig-zag direction. From the foot of this mountain arises the rapid river Spey; and other streams run to the west, circumstances which indicate great elevation. About thirty miles to the east, rises the mountain Cairngorm (4060 feet), or the blue mountain, clothed with almost perpetual snow, and remarkable for quartz of different colours, chiefly the smoaky kind, well known to lapidaries. The other chief mountains in this region, are those of Braemar or Scairsoch, at the source of the Dee; Ben Awn, and many of smaller height, such as Benibourd†, Benachie, &c.

In the second division of the Highlands, which lies beyond Loch Linny and Loch Ness, the mountains are yet more numerous, but not so memorable. The western shore, in particular, is crowded with hills, from the island of Skey to cape Wrath, while a branch, spreading eastward towards Ord-head (1250 feet) forms, what are termed by seamen, the Paps of Caithness (1929 feet.) The chief mountains on the west of Rossshire, are Ben Chat, Ben Chasker, Ben Golich, on the south of Loch Broom; Ben Nore, on the north of that commodious haven; and the hills of Cuinak, on the south of Calva bay, or in the native language Kylis-Cuin. More inland, are Ben Foskaig; and the chief mountain in this district, Ben Wevis (3720 feet).

On proceeding to the most northern parts of Scotland, the counties of Sutherland and Caithness, first occurs Ben Ormoid; then Ben Cliberg, on the west of Loch Naver; and Ben Grim, to the north of which extends the chain, called the Paps, consisting of the mountains Morben, Scuraben, &c. from which run in a northerly direction, according to the course of the rivers, inferior chains, as that of Ben Maddy, on

[7] Statist. Acc. viii. 414.

* Drumalban, the *Dorsum Britanniæ* of the old writers, seems to be Ben Nevis, with the high desert Moor of Rannoch, extending twenty miles to the east of that mountain.

† Always covered with snow, and, perhaps, as Mr. Aikin conceives, higher than Cairngorm. About the height of 4000 feet, snow remains all the year in Scotland.

the east of the river Naver, &c. The north-west extremity of Scotland presents some pleasant vales towards the sea, and inland that of Dornadilla, and an elevated plain on the west of Loch Loil, called Dirrymore forest[8]: that district called Rae's forest, consists of a bed of rock, interspersed with patches of morass. The chief mountains are Ben Hop, and Ben Lugal: further to the west no names occur, except that of Cape Wrath, and the region is described by an intelligent traveller in the following terms[9]:

CAPE WRATH.] "But a wide extent of desart country lay before us, and exhibited a most august picture of forlorn nature. The prospect was altogether immense, but wild and desolate beyond conception. The mountains presented nothing to view but heath and rock; between them formless lakes and pools, dark with the shades thrown from prodigious precipices, gave grandeur to the wilderness in its most gloomy forms." Curiosity has been appalled, and no traveller has penetrated into the wilds of Ashir, for such is the name of this district, which is by our seamen corrupted into Old Shores; but from the vast caverns in the vicinity of Cape Wrath, it is probable that the environs are chiefly calcareous[10].

Having thus explained at some length, the directions and positions of Scotish mountains, because they constitute the most remarkable feature of the country, and yet have never received due illustration, their constituent parts remain to be briefly examined[11]. On entering the Highlands, near Dunkeld, the first ridges are alluvial hills of gravel, containing pebbles of micaceous schistus, quartz, and granite, sometimes surmounted by slate and argillaceous schistus. The rocks immediately to the north of Dunkeld, are composed of micaceous schistus, penetrated in every direction by veins of quartz. From the junction of the Tay and Tumel, westward to Loch Tay, the northern bound of the vale is of the same substances, sometimes interspersed with garnets. The whole summit of the higher chain is covered with large round masses of granite. The southern shores of Loch Tay consist of micaceous schistus, with a few garnets, interrupted about the middle with banks of compact bluish grey lime-stone. The northern shores similar, but the lime-stone is micaceous. The mountains in Glenlochy are mostly of micaceous schistus, interspersed with garnet: Glen Lyon presents small veins of lead. The vale of Tumel, between Loch Tumel and Loch Rannoch, is overspread with rounded fragments of granite and micaceous schistus, but contains granitoid, and some granite. The lower part of Glen Tilt chiefly exhibits micaceous schistus; the upper principally granite and lime-stone.

Such are the more southern parts of the Highlands. In the west, towards Ben Lomond, micaceous schistus also abounds; but that mountain is chiefly of gneiss, and the like features are found in the peninsula of Cantire. In the north of Argyleshire*, appears the beautiful red granite, which chiefly constitutes the central chain, already indicated; to the north of which first appears micaceous schistus, and afterwards a remarkable course of pudding-stone, extending from Loch Ness to Oban†. The mountains

[8] Cordiner's Letter to Pennant, p. 111. [9] Ibid. 104.

[10] Statist. Account, vi. 279. (Parish of Edrachillis.) The account of the interesting parish of Durness, in which Cape Wrath stands, vol. iii. 576. is very lame and defective; if we trust the author, p. 579, the whole parish is lime-stone, and Cape Wrath affords excellent pasturage for sheep.

Assynt, &c. produce marble; and the north-west part of Scotland is chiefly calcareous, with patches of granite and basalt, which generally accompany each other.

[11] Mr. Aikin's Notes. According to Mr. Playfair, in his Illustrations of the Huttonian Theory of the Earth, Edin. 1802, p. 346, *et seq.* there are only two large insulated tracts of granite in the south of Scotland, one in Kirkudbrightshire, another in the Lammermuir, near Priestlaugh. But this author is so fond of theory, that his facts are received with hesitation.

* Cruachan, according to Mr. Jameson, consists, at the bottom, of slate and micaceous schistus, which is followed by granite to the top. Near Strontian are red granite and gneiss. Glen Co presents curious porphyries.

† According to Williams, II. 159, a like range extends through Perthshire, into Monteith and Dumbartonshire,

mountains in the north have been little explored; but Mr. Jameson tells us, that the coast is chiefly a coarse argillaceous sand-stone, often appearing in the form of flags, while in some places are masses of breccia, being pebbles of red granite, micaceous schistus and quartz, in arenaceous bases. Mount Scuraben is at the bottom sand-stone, and sand-stone flag, then the breccia, succeeded by a rock of white quartz to the summit, and probably forming the root and centre of the whole. Morben, and other mountains in this district, from their white colour, seem to be of the same composition. About the Ord of Caithness appear granite and micaceous schistus, and that mountain consists of mingled quartz and felspar. Near Dornoch, the rivers roll pebbles of micaceous schistus and granite, evincing the materials of the mountains, but their lower strata consist of argillaceous sand-stone, till near Tain, where are granite, micaceous schistus, and hornblende. The sand-stone and breccia re-appear at Cromarty, and at Murray Firth, but at Fort George the primitive rocks begin. About two or three miles south of Aberdeen, the red-coloured argillaceous sand-stone and breccia again occur; and the castle of Dunotter stands on a rock of the latter substance.

The central and western parts of Sutherland and Rossshire, have not been explored; but it would seem that the west of Sutherland is chiefly primitive lime-stone, which is well known to form a great part of Assynt, and sometimes contains masses of white marble. The mountains seem to be of granite and micaceous schistus, but often present the singular feature of vast summits formed of white quartz. According to Williams, this quartz is stratified, and tinged with blue or bluish grey; and bears no vegetation, so that at a distance it resembles snow. Near Loch Broom is found that sort of granite which is best adapted for mill-stones.

Upon the whole it would appear, that the chief or granitic chain of the Scotish mountains, extends in a south-west and north-east direction from Ben Nevis to Portsoy. In many parts it has sunk or subsided, as not unusual, but the line is marked by the gradual transitions from lime-stone and sand stone, to micaceous schistus, and thence to granite. Ben Nevis, Cairngorm, and other lofty summits, mark this primitive chain. The Grampians, which form the outer skirt of this chain, consist, according to a German mineralogist[12], of micaceous lime-stone, gneiss, porphyry, slate, and granite, alternating with each other; and another German says, that the fundamental rock of the country consists of granitic aggregates. The mountains in the south-west are chiefly schistose, and the granite is grey, and of an inferior kind; but Mr. Williams informs us, that Ben Nevis, and other mountains in that quarter, are composed of elegant red granite, in which the pale rose, the blush, and the yellowish colours, are finely mixed and shaded[13]. The like granite is found at Portsoy and Trouphead, and is probably

continued

bartonshire, crossing the Clyde, near Dunbarton, and reaching the west side of Ayrshire, where it enters the Firth of Clyde; it hence seems to follow, in the same direction, the grand granitic chain of Scotish mountains.

[12] Kirwan's Geol. Essays, 481.

[13] Mineral King. II. 13. The following extract is from Nicholson's Journal, May 1810. The reader may justly be surprised at the barbarous German idiom in which it is conveyed; for though a new science will often require new words, yet this very circumstance renders a clear, classical, and analogical style the more necessary:—

"At a Meeting of the Wernerian Society of Edinburgh, on the 10th of March, the Rev. Dr. Macknight read a paper on the mineralogy of Strontian and Ben Nevis. The rocks which compose the districts of Strontian are mica slate, gneiss, and granite; and the lead-glance which occurs in gneiss, is associated with iron pyrites, cross-stone, calc-spar, foliated zeolite, strontian, and heavy spar. Ben Nevis is an overlying massive formation, which rests on gneiss and mica-slate, approaching in some places to clay-slate. In this formation, compact feldspar is the leading ingredient. The inferior mass consists of sienite, passing from the simple-granular to the granular-porphyritic; and the upper portion of the mountain, comprehending the summit, with about 1400 feet of the perpendicular height below it, is composed of a dark-coloured rock, which for the most part is porphyritic, and seems to be intimately allied in its characters to compact feldspar. This appears from the gradual transition of the one substance into the other,

which

continued through the whole chain, the superior height of the region being marked by the extreme rapidity of the river Spey. This tendency of the leading chain, is not only marked out by the Grampians, but by that of the islands, and of the grand chain in Norway, which, indeed, seems a continuation of the Scotish chain, and the last, probably contains silver as well as the Scandinavian. The mountains on the N. W. of the lakes Ness and Linny, are probably only exterior skirts of the same chain, and present the usual declension of micaceous schistus, terminating in lime-stone and sand-stone, in the northern parts of Sutherland and Caithness. The islands of Shetland chiefly present micaceous schistus, interspersed with a few masses of granite; and the Orkneys, &c. consist mostly of sand-stone. The western islands may be supposed to be chiefly calcareous. It is remarkable that the space from Inverness to Dunolla, on the west, abounds with farcilite (pudding-stone) composed of pebbles of quartz, probably washed down from the granitic chain, and afterwards cemented by some unknown process of nature, either by iron or siliceous earth.

General Roy mentions two remarkable features of the Highlands, first the moor of Rannoch, a high desert of twenty miles square, on the S. E. of Ben Nevis, being a flat uninhabited morass. The second is part of the N. W. coast, extending from Loch Inchard, twenty-four miles to the south, breadth about ten miles, which presents a most singular appearance, as if mountains had been broken into fragments, interspersed with pools of water. The northern extremities of Caithness are low and morassy, and seem calcareous, as well as those of Sutherland.

FORESTS.] The forests of Scotland are very rare in the proper acceptation of the term; and the Sylva Calèdonia has long since vanished. The whole county of Selkirk was formerly denominated Ettric forest. There was also a considerable forest, that of Mar, in the west of Aberdeenshire, where now remains the forest of Abernethy[14], extending to Cairngorm. In the county of Sutherland was the forest of Sletadale, on the north of Dunrobin, the seat of the earls of Sutherland; and in the north of the same county, are marked Parff forest, between Ashir and Dunan, (probably originally Wharf forest, by the same name as the cape;) to the south of which were Reay forest, or that of Dirrymone; with those of Dirrymore, and Dirrymena, on the north and south of Loch Shin. No other forest occurs till we reach the county of Argyle, which contains Boachiltive forest on the north. Mention is made by late travellers of a royal forest near Loch Ketterin, called Finglas; but for this there seems no authority. The forest of Athol, in the same county, does not appear liable to the same objection.

BOTANY.] Having given a general account of the indigenous plants of England, it will suffice for the botany of Scotland, to point out the particulars in which the two floras differ, together with the causes of the difference*.

The northern part of Britain differs from the southern as to climate, in being colder and more rainy; and as to soil, in consisting chiefly of mountainous granitic, or micaceous districts, the highest peaks of which are buried in perpetual snow. There

which is distinctly observed under the tremendous precipice of Ben Nevis to the north-east, and demonstrates the identity and continuity of the whole formation. The colouring matter appears to be hornblende intimately mixed with the substance of the rock. At first view the whole might have been considered as a formation of clink-stone and porphyry-slate. But a more minute investigation discovers many oryctognostic characters of distinction from these substances, which are less crystalline, and belong to a more recent era of formation."

This description of Ben Nevis ought to be translated; but we probably learn from it that the base of Ben Nevis is of gneiss and mica-slate, which is followed by the syenite of Werner, or a mixture of felspar and hornblend: while the superior portion of a dark grey colour seems to approach to compact felspar, intimately mingled with hornblend.

[14] Prov. of Moray, Aber. 1798, 8vo, p. 267.

* Smith's Flora Britannica.—Lightfoot's Flora Scotica.

are no chalk-hills in Scotland; nor any of that soil which characterises the south-eastern part of the island, and is composed, for the most part, of sand and calcareous marl. We might, therefore, *a priori*, expect to meet with more alpine plants in Scotland, than of those which flourish best in a light chalky soil, and in a mild climate; this is found to be in fact the case. The greater number of vegetable species is the same in both countries; but the warm, moist region of Cornwall, Devonshire, and Dorset; the range of chalk-hills, on each side of the valley of the Thames; the dry, sandy tracts of Norfolk, Suffolk, and Cambridge, and the fens of Lincolnshire, contain many plants that are unknown to Scotland; as, on the other hand, the snowy summits of the Grampians, the extensive forests of Badenoch and Braemar, and the bleak, shelterless rocks of the Hebudes, possess many hardy vegetables, which are not to be found in England. South Britain contains a greater number of species peculiar to itself; but those that are similarly circumstanced in the northern part of the island, are of more frequent occurrence, and therefore more characteristic: to the English botanist, Scotland will have more the air of a foreign country, than England will to a Scotish naturalist. Amidst the general romantic scenery of the Highlands, the search of the English botanist is continually solicited and repaid, by the appearance of plants, either altogethes new to him, or which he has been accustomed to consider as the rare reward of minute investigation. In traversing the vast natural forests of birch and pine, although his notice will be first attracted by the trees themselves, in every stage of growth, from the limber sapling, to the bare and weather-beaten trunks that have endured the storms of five or six hundred winters, yet the new forms of the humbler vegetables will soon divide his attention; the red and white blossoms of the trailing *Linnæa*, the *Pyrola secunda*, and *uniflora*, *Satyrium repens*, *Ophrys corallorhiza*, and *Convellaria verticillata*, will each attract their share of regard. If he be winding along the rocky margin of Loch Tay, or Loch Ness, the *Eriocaulon decangulare*, the alpine *Circæa*, the minute *Subularia aquatica*, will reward his labour; the moist and shady recesses of the slate mountains, are carpeted by the three *Veronicas*, the *alpina*, the *saxatilis*, and *fruticulosa;* by the *Saxifraga umbrosa*, the *Thalictrum alpinum*, and *Erigeron alpinum*. In the thin peat moors that overspread the rocks are found the *Schoenus rufus*, *Scirpus multicaulis*, *Jucus trifidus*, *biglumis*, and *spicatus*, all of them belonging to the natural class of rushes; with the Alpine cotton-grass, and some of the dwarf species of *willow*. The mountainous districts of granite are peculiarly rich in alpine plants; the ledges and crevices of the rocks are adorned by tufts of the golden cinquefoil, (*Potentilla aurea*); and luxuriant festoons of the *Arbutus alpina*, and *Arbutus uva ursi*, glowing with their scarlet and deep blue berries, among their glossy leaves; the less precipitous parts, and the borders of the torrents, are overspread with alpine grasses, with the viviparous *Polygonum*, the *Azalea*, and *Sibbaldia procumbens*, the yellow *saxifrage*, the *Dryas octopetala*, *Rhodiolia rosea*, *Rubus arcticus*, and the alpine *Alchemilla*. The cloudberry (*Rubus chamæmorus*,) and some of the *lichens* flourish amidst the snow and solitude of the most elevated summits; and afford at the same time shelter and food for the Ptarmigan, almost the only one of our native birds that can inhabit so cold a situation. The Lowlands of Scotland seem to contain no plants which are not found in similar soils in England; the sea-coast, however, exhibits two umbelliferous vegetables, the *Ligusticum Scoticum*, and *Imperatoria Ostruthium*, which have not been met with on the southern shore.

Zoology.] The zoology of Scotland presents little remarkable, as distinct from that of England. The small horses of Galloway seem to have been a primitive breed, and, in diminutive size, are exceeded by those of Shetland. The cattle in Galloway are often without horns, a defect which is supposed to be recompensed by the superior quantity and quality of the milk. The kylies, as already mentioned, are a middle-sized

sized breed from the province of Kyle, and other districts of Ayrshire and Galloway. On the east are found large cattle, of various breeds. The sheep are smaller and shorter than those of England, but are now crossed in various directions; those of Shetland are remarkable for the fineness of the wool, which is, however, interspersed with coarser piles. Goats are not so numerous in the Highlands and Isles as might be expected: this animal not only enlivens the Alpine landscape, but yields useful leather and milk, and might occasionally supply the want of other provision. Of dogs, no breed is remembered peculiar to Scotland; but the shepherd-dogs in the province of Galloway, are endowed with remarkable sagacity, so as to understand and execute even complicated commands.

Of wild animals, the wolf has been extirpated in Scotland, only since the year 1680. The wild cat is still occasionally found; the other classes correspond with those of England, except that the Roe is still not unfrequent. Among the birds, eagles are not unknown, nor elegant falcons. The shores and islands present numerous kind of sea-fowl. In the progress of cultivation, some new birds have appeared from England; for instance, the golden-crested wren, which even visits Shetland, after a flight of sixty miles, which is surprising for so diminutive a bird[15]: but the nightingale, who would be a most welcome guest, still refuses the journey.

Scotland abounds with fish of all kinds, and contributes great supplies to the English market, particularly in lobsters and salmon. By some singular chance, the holibut, a coarse dry fish, is in England styled the Turbot, which in Scotland is called *Roddenfleuk*, the last word being a general denomination for flounders, and other flat fish. The transparent lakes, rivers, and rivulets of Scotland, present a beautiful variety of fish: on the northern and western coasts are numerous seals; and it appears from the life of St. Columba, that the ancients had a mode of rendering them tame, and obedient to the call. The whale sometimes appears, and the basking shark frequently plays in the western inlets. Pearls are found in the rivers Teith and Ythan, in a large kind of mya, or muscle. Some large ones are in the shape of a pear, others are pink on one side. Many beautiful zoophites, on the northern shores, have been found and introduced to public notice, by Mr. Cordiner.

MINERALOGY.] In considering the mineralogy of Scotland, it may be premised, that a country so mountainous must be naturally expected to abound with metals, and some fortunate accident may, perhaps, discover in some of the skirts of the granitic chain, silver mines, equal to those of Norway; for such discoveries arise not from a sedulous or skilful inquiry, but from the trifling accidents of a shower of rain, of a shepherd running after a goat, or the like. Mr. Kirwan has given an excellent account of the various substances in which metals are generally found[16]. In granitic mountains, tin, lead, iron, zinc, bismuth, cobalt; and in gneiss, or schistose granite, silver, copper, lead, tin, and zinc. In micaceous schistus are found copper, tin, lead, antimony; in hornblende slate, copper ore; under argillite, or common slate, silver, copper, lead, zinc. In steatite, sulphureous pyrites, and magnet. In primitive limestone, appear copper, lead, zinc; and even in strata of coal, have been found native silver, galena, and manganese. The small quantity of gold found in Scotland, has been procured from the Lead-hills, which are mostly composed of coarse slate. This precious metal first appeared, as already mentioned, in the sands of Elvan, a rivulet which joins the Clyde, near its source; and a place still exists, called Gold-scour, where the Germans used to wash the sand. None worth mentioning has been found recently. The silver generally accompanies lead; and in the rich mines of Saxony, the baser metals were found near the surface, but the richer at a greater depth. The

[15] Pennant's A. Z. vol. i. 39.

[16] Geol. Ess. 428.

silver found in Scotland, has hitherto been of little account; the chief mine was that at Alva, which has since only afforded cobalt. Nor can Scotland boast of copper, though a small quantity was found in the Ochills, near Alva, with silver and cobalt; and it is said that the islands of Shetland offer some indications of that metal. Copper has also been found at Colvend in Galloway, at Curry in Lothian, at Oldwick in Caithness, and Kissern in Ross-shire.

The chief minerals of Scotland are lead, iron, and coal. The lead mines in the south of Lanarkshire, where the gold was also found, have been long known. Those of Wanlock-head, are in the immediate neighbourhood, but in the county of Dumfries, and belong to another proprietor. These two mines yield nearly above 2000 tons. The Susannah vein, Lead-hills, has been worked for 60 years, and produced vast wealth*. Some slight veins of lead have also been found in the western Highlands, particularly Arran. Iron is found in various parts of Scotland; the Carron ore is the most known, which Mr. Kirwan describes as being an argillaceous iron-stone, of a blueish-grey, internally of a dark ochre yellow[17]. It is found in slaty masses, and in nodules, in an adjacent coal mine, of which it sometimes forms the roof. At the Carron-works, this ore is often smelted with the red greasy iron ore from Ulverston, in Lancashire, which imparts easier fusion, and superior value. Calamine, or zinc, is also found at Wanlock-head; and it is said, that plumbago and antimony may be traced in Scotland†.

But the chief mineral is coal, which has been worked for a succession of ages. Pope Pius II. in his description of Europe, written about 1450, mentions that he beheld with wonder, black stones given as alms to the poor of Scotland. But this mineral may be traced to the twelfth century. The earliest account given of the Scotish coal mines is contained in a book, published by one George Sinclair, who calls himself Professor of Philosophy at Glasgow, but I cannot trace him in the university list[18]. He explains, with some exactness, the manner of working coal; and mentions the subterraneous walls of whin which intersect the strata, particularly a remarkable one, visible from the river Tyne, where it forms a cataract, and passing by Preston-pans, to the shore of Fife. Mr. Williams has recently given his observations on this subject, with much practical skill. The Lothians, and Fifeshire, particularly abound with this useful mineral, which also extends into Ayrshire; and near Irwin is found a curious variety, called ribbon coal. A singular coal, in veins of mineral, has been found at Castle Leod, in the east of Ross-shire‡.

* See Jars Voy. Met. who regards these as the richest mines of Europe. That of Arkingdale, in Yorkshire, is now the first in England.

[17] Min. vol. ii. 174.

† Plumbago is found in considerable quantities near Cumnock, in Ayrshire. It is said to be a continuation of a bed of coal, which, being intercepted by a vein of grunstein, changes to plumbago, which becomes the purer as it approaches nearer to the grunstein. This last substance and trap, or basalt, are in Scotland called *Whin*, a word which, being merely provincial and unknown to the mineralogists of Europe, ought to be dismissed from exact nomenclature. Manganese is found in Aberdeenshire. It is also said that corindon has also been discovered in the same county.

[18] Nat. Phil. improven by new Exp. Edinb. 1683. Quarto, p. 258—302.

‡ It is supposed that the largest untouched field of coal in Europe exists in Scotland, in that singular barren track of country in Carluke and Cambusnethan parishes, Lanarkshire, continuing with intervals to Douglas parish, to Glenbuck and Muirkirk, in Ayrshire, and thence to the town of Ayr. The Cleugh or Wilson-town, in Lanarkshire, is the south-east of this coal field, which is excluded by the Shot hills, but extends on the west along the bason of Clyde. This supply of coal would be of great importance, as my correspondent supposes that all that exists between the Forth and the Esk, will be exhausted in 40 years. From a Letter of Gilbert Laing, Esq. Oct. 1805.

See also two spirited and satisfactory pamphlets, by Stewart of Allanton, Edinb. 1800, 8vo.; whence it appears that this great coal tract extends like an isosceles triangle, the vertex being near Glasgow, and the base towards Carluke, the length being about twenty-two miles.

In

In passing to the less important minerals of Scotland, the new earth found at Strontian, in the district of Sunart, and parish of Ardnamurchan, Argyleshire, is now consecrated in numerous systems of mineralogy and chymistry. Ben Nevis affords beautiful granite. Fine statuary marble is found in Assynt, and at Blair Gowrie, in Perthshire. A black marble, fretted with white like lace-work, occurs near Fort William; dark brown with white at Cambuslang, Clydesdale. Jasper is found in various parts; Arthur's seat offers a curious variety; and on the western shore of Icolmkill, are many curious pebbles, of various descriptions[19]. Fuller's earth is found near Campbeltown, in Cantire; and, it is supposed, that there must be a vast mass of talc, equal to that of Muscovy, in the mountains which give rise to the river Findorn, as large pebbles of it are sometimes found in that stream. The pearls have been already mentioned: but that any of the gems are found in Scotland, seems dubious. Quartz and fluor assume various hues; and what are called false sapphires, rubies, emeralds, &c. fall under one or other of these descriptions, while the real gems belong to the argillaceous class, and when examined with a microscope, are found to consist of minute layers, a form common to the argillaceous description*.

MINERAL WATERS.] The mineral waters of Scotland are numerous, but none of equal fame with those of England. The chief are Moffat wells in the south, and those of Peterhead in the north.

NATURAL CURIOSITIES.] Scotland, like other mountainous countries, abounds with singular scenes, and natural curiosities. The caves on the shore near Colvend, in Dumfrieshire, are worth notice; and the beautiful falls of the Clyde, near Lanark, have deservedly excited much attention. In proceeding up the river from Lanark,

[19] Garnett's Tour.

* The author has since been favoured with some notes upon this interesting subject by W. A. Cadell, Esq. who is not a little conversant in this branch of science. The mamelated ore of zink is among the products of the Lead-hills. Hartfell is of primitive argillaceous schistus; its mineral water is vitriolated, that of Moffat sulphurated. On the hill near Langholm are found masses of calcedony. Near Broxmouth is black marble, with large madrepores. Slates are worked near the Cairn's Inn, Loch Ryan. At Frisky, twelve miles below Glasgow, there is an old wall composed of trap from the neighbouring hills, containing masses of beautiful prehnite. The rock of Dunbarton castle is trap.

Near Killicrankie is hornblend schistus. At Balmerino are found eyed agates on the shore in considerable quantities; the neighbouring rocks seem to contain those stones, as do those of Scot's craig, opposite to Dundee. Beautiful agates are also found in the river May, but the lapidaries of Edinburgh are chiefly supplied from the south bank of the river Esk, opposite Montrose. Near Aberdeen the granite is grey, but at Peterhead red. At Strontian were found zeolite and staurolite, but the last not in crosses. Loch Awe abounds in lapis ollaris, of which Kilchurn castle is built, and several ornamental tombs of this stone occur in the church-yard of Glenorchy, and in an isle in the lake. The western summit of Cruachan is red granite, and the upper part of the mountain is composed of large blocks of the same stone heaped together, a not unusual circumstance, granite being often in large rhomboidal divisions, and dividing easily by those natural seams. The only place in Scotland where flint seems to be found, is on the western side of the isle of Mull. Ulva presents columnar basalt. In Icolm Kill there is a stratum of white marble, of a schistose texture, containing steatite, which traverses the island from north-west to south-east; the crosses are of gneiss, the causy of granite. Gypsum is rare in Scotland, but a small vein of the red kind is observable in Campsey hills, near Dunbarton.

Stirling castle stands on grunstein, which has something of a columnar form, and decomposes in spheroidal strata. At Airthy is a copper mine worked at present. One of silver existed at Binnycraig, on the southern shore of the Forth. Pentland hills seem to be trap; that nearest Edinburgh, on the Linton road, is agate rock. Braid-hill and Blackford-hill are likewise trap, in the latter veins of jasp-agate and jasper. Craig Lockhart and Corstorphin hills are grunstein. The Castle-hill of Edinburgh black basalt with prehnite. Salisbury Craigs trap, grunstein of red felspar and black hornblend, jasper with spots of iron, &c. Calton hill partly porphyry, light red spots upon a purplish ground; chrystals are found of twenty-four sides, resembling leucite, but of a redish colour. Inchcolm presents thin veins of fibrous green serpentine in a decomposed trap. Bass is of redish trap; at the harbour of Dunbar is a causy formed by the extremities of hexagonal columns of a red stone (trap or jasper?) traversed by veins of a fine white hornstein. (See Pococke, Ph. Tr. lii.) Coal is only wrought in Scotland in the two basons of the Forth and the Clyde, including that of the Ayr.

first occurs a small cataract, called Dundaff Linn, then that of Corra, the most picturesque; and a little more than half a mile further, that of Bonnington appears, a single cascade, of about twenty-seven feet. To the west of Lanark is found the cataract of Stone Byres, beyond which salmon cannot pass up the stream. On the east of this part of Scotland, are the pastoral vales of the Tweed and Teviot, celebrated in song; the deep pass of the Peaths; and the romantic rock of Bass, the haunt of the solan goose; and a well near Edinburgh abounds with petrol. The basaltic columns of Arthur's seat deserve inspection. On the northern shore of the Forth, near Dysart, a coal mine has for ages been on fire, probably from decomposed pyrites, and has supplied Buchanan with a curious description. The beauties of Loch Lomond have been so often described, that it is unnecessary to repeat so trivial a theme; but the *Trosacs*, or singular hills around Lake Ketterin, &c. form a new acquisition to the traveller. The hill of Kinnoul, near Perth, is a great curiosity, presenting a mass of uncommon minerals. The numerous lakes and mountains need not be again mentioned. The rocks off the coast of Aberdeenshire, often assume singular forms of arches and pillars, &c. and the space from Trouphead to Portsoy, abounds in uncommon rocks, and singular marine productions. The caves of Nigg, in Ross-shire, may be worth visiting; and the more northern shores present innumerable wild scenes of savage nature. Near Lathron, in Caithness, is a large cave, into which the inhabitants sail to kill seals. Nosshead presents a singular quarry of slate, marked with various metallic figures. The isles Stroma, near the northern shore, preserve dead bodies for a long time without corruption[20]. It may, perhaps, be esteemed a natural curiosity, that the river of Thurso was so abundant in salmon, that 2500 have been caught in one morning. Near Tong is the cave Frasgill, about fifty feet high, and twenty wide, variegated with a thousand colours, which are lost in each other with a delicacy and softness that no art can imitate[21]. On the east of Durness, is the cave of Smo, within which is the resemblance of a gate, succeeded by a small lake of fresh water, containing trout; the extent of this subterraneous lake, has never been explored: and near Sandwit is said to be a small grove of hazels, about four inches high, bearing nuts. The singularity of the coast of Edrachills, south of Loch Inchard, has already been mentioned. But the verdant pastures of Farouthead and Cape Wrath, may well be esteemed a natural curiosity in that distant region, where the want of roads and bridges remains a disgrace to the country. The western coast of Ross-shire does not seem to contain any object worth mentioning, and that district remains to be explored by the curious traveller. We only know the grand cataract of Kirkag river, and the cave of Gandeman, near Assynt point. The cascade of Glamma, in the heights of Glen Elchaig, is truly sublime, amidst the constant darkness of hills and woods. Ben Nevis will, of course, attract notice from its singular form and elevation. According to Mr. Williams[22], it consists of one solid mass of red granite, which he traced at the base for four miles along the course of a rivulet on the east; the height of this mass he computes at 3600 feet, and above it are stratified rocks, the nature of which he does not explain; but, he says, that those on the summit are so hard and tough, that wrought iron falls short of them. The stupendous precipice, on the north-east side, exhibits almost an entire section of the mountain. In Argyleshire, the marine cataract of Loch Etif, the beautiful lake of Awe, and environs of Inverary, present the chief objects of curiosity.

[20] Bryce's Map, directed by Mac Laurin. [21] S. A. III. 519. [22] Vol. ii. 63.

SCOT-

SCOTISH ISLES.

Scotish Isles.] The Islands that belong to Scotland are numerous and important, and fall naturally into three grand divisions; the Hebudes*, or Western Islands; the Orkneys; and the Islands of Shetland.

Arran.] On passing the conic rock, called Ailsa, towards the north, two beautiful islands adorn the Firth of Clyde, those of Arran and Bute [1]. The first is about twenty-three miles in length, by nine in breadth, and has 7000 inhabitants. The chief place is the village of Ranza; and Brodic castle is memorable in history. The exports are black cattle and barley [2]. Mr. Jameson has recently published an account of this island, particularly its mineralogy, from which it appears that it is a mountainous region: and Goatfell is near 3000 feet in height. The southern parts of the island present low and cultivated grounds; the base is chiefly sand-stone and granite, the former traversed by veins of basalt. Near Lamlash, is an extensive vein of pitch-stone, of a greenish colour, and the black also occurs. There is also granitine, composed of quartz, felspar, and hornblende; micaceous schistus likewise abounds; there is little coal.

Bute.] Bute is about twelve miles in length, by four in breadth; inhabitants about 4000; the chief town is Rothsay, and in the vicinity is Mount Stuart, the ornamented residence of the Marquis of Bute, and worthy of the distinguished taste of the noble proprietor.

Hebudes.] To the west of the Chersonese of Cantire, begin the Hebudes, or Western Islands, properly so called. These islands fall naturally under two divisions, which may be termed Interior and Exterior Hebudes.

Interior Hebudes:

Ilay.] The first is Ilay, about the same length as Arran, but nearly eighteen miles in breadth. Ilay produces many black cattle, which are exported, and sometimes pass as far as England [3]. But the sheep are rare; small horses are much used, as the country is not very mountainous. This isle belongs to Mr. Campbell of Shawfield. Inhabitants about 7000. Lead mines were here discovered in the sandstone, 1763; this lead is, as usual, mingled with silver. Copper has also been found, and there are appearances of emery, and even of plumbago. At Saneg-mor is an intricate cave.

Jura.] Jura is divided from the last by a narrow sound: it is about twenty miles in length, but the breadth seldom more than five. It is one of the most rugged of the Hebudes, which, in general, are mountainous regions. The paps of Jura, a line of conic hills, present a singular appearance; they are on the western side of the island, and almost bare of vegetation [4]. The best crops are potatoes and barley; and the isle contains abundance of peat. The cattle are small, but the sheep are excellent. Minerals, iron-ore, and manganese; and there is a quarry of slate. The noted gulph or whirlpool of Brecan, or Corryvrekan, is on the northern extremity of Jura [5].

To the west of Jura are the isles of Oransa and Colonsa; and the strait between them being dry at low water, they may be considered as one island, about ten miles in length. Soil generally light and arable, producing barley and potatoes. The venerable

* This name was corrupted by Hector Boyce, into Hebrides, a name still retained by those who prefer the old mumpsimus, to the old sumpsimus. Boyce was misled by an edition of Solinus, Venice, 1491, 4to. in which, among many errors of the press, Ebrides is put for Ebudes.

[1] Pennant's Voyage, 168. [2] Stat. Account, vol. ix. p. 169. [3] S. A. xi. 278.
[4] S. A. xii. 318. [5] Knox's View, ii. 451.

ruins

ruins of the ancient monastery of Canons regular, in Colonsa, now exist no longer; but those of a curious priory in Oransa still remain[6].

MULL.] The next isle of any consequence is that of Mull, one of the largest of the Hebudes, and surrounded with smaller interesting islands. Mull is about twenty-eight miles in length, by a medial breadth of about eighteen. An intelligent traveller informs us, that the population is about 7000[7]. The climate cloudy and rainy. Chief diet of the people, potatoes or barley meal, with a little fish; drink pure water, sometimes a little whisky. Hovels constructed of whin; and the thatch guarded against the wind with large stones, the smoke ascending by a hole in the roof. The ingenious author observes, that the Esquimaux, and Laplanders, prepare better residences. On the north-east is the new village of Tobermory, which it is hoped will be prosperous. According to St. Fond, this island contains a large portion of basaltes; and the mountain of Ben More presents to his eye appearances of lava. On the north of Ashnacregs he discovered a curious wall of basalt, forming a kind of ancient circus. It is, indeed, not a little remarkable, that while the opposite shores of Argyle present the same red granite which here pervades Scotland, in a line from the north-west to the south-east as already mentioned, yet Mull, which is directly in that line, seems to display no appearance of it, a circumstance which adds to the credibility, that in this neighbourhood may have been an ancient volcano, which deranged the course of nature. For though the volcanic system have been pushed by some French writers to a ludicrous excess, yet when we consider the numerous volcanoes existing in Kamschatka, and particularly along the Andes, in South America, by many believed to have been a continent of later formation than those of the other hemisphere, it may seem mere prejudice, not to allow the existence of volcanoes, in certain instances; though fire be in general too potent an agent for the mild progress of nature, and, indeed, nearly accidental, while water is her grand and universal engine: but, on the other hand, when we reflect that basalt is strongly impregnated with iron, and that the basaltic columns are also found at Edinburgh, at Dichmont, Clydesdale, and in Skey, and extend over great part of the county of Antrim, we must allow a circle of about 600 miles for this eruption, far too vast for any volcano or volcanoes, and probably arising from the fermentation of iron in the interior of the globe. Mull, as already observed, stands in the centre of several small but interesting isles. On the east is Lismore, fertile in oats, bigge, or beer, often called by the vague name of barley, though it be a very distinct species from the English barley. This isle was anciently the chief seat of the Bishops of Argyle, who were thence denominated Bishops of Lismore, and some ruins of their residence remain; it was in consequence well replenished with deer, and fables have arisen that it was once a forest. To the south of Lismore occurs Kerrara, remarkable for the death of Alexander II. in 1249[8]. To the vulcanist St. Fond[9], Kerrara seems partly volcanic, as it produces basalt; but it has also slate, and a fibrous micaceous schistus, composed of quartz, steatite, and mica.

ICOLM-KILL.] But the most curious objects in the vicinity of Mull, are Icolm-kill, and Staffa. Hyona, or Icolm-kill, is about three miles long, by one broad, and is venerable as the primitive seat of Scotish literature and religion founded by St. Columba in the sixth century. Its history and ruins have been often described; but, it may be added, from a recent traveller, that the isle produces beautiful white marble, and large blocks of jasper, or rather indurated steatites[10]. The sacred edifices are partly constructed of red granite, resembling the Egyptian, which forms Icolm-kill, and the isle of Nuns adjacent, fragments of the great granitic chain, formerly mentioned. Some

[6] Stat. Acc. xii. 327. [7] St. Fond, tome ii. p. 89. [8] Pennant, 357. [9] Tome ii. 170.
[10] Garnett, I. 266, corrected by Jameson, in his Mineralogy, and by the ocular observations of a friend.

parts of the isle are said to present green and red jasper, elegantly veined, and some specimens of zeolite; in the bay of Martyrs, on the east side, is found hornblende; and in the small haven, on the opposite part of the isle, are immense numbers of beautiful pebbles, chiefly serpentine, jasper, granite, marble, lapis nephriticus, nephritic asbestos, violet coloured quartz, and porphyry. These pebbles are rounded, and finely polished by the tide, which rolls immense quantities of them backwards and forwards, with a noise like thunder [11]. In botany this isle produces the beautiful sea bugloss, and the sea holly; the Lapland willow, a scarce shrub, grows not far from the marble quarry: navel wort, marsh trefoil, and dwarf juniper, are also found.

STAFFA.] Staffa, about six miles to the north of Hyona, was first introduced to public notice by Sir Joseph Banks. Buchanan has mentioned the isle, but not its grand singularities, its beautiful basaltic columns, and one of the most surprising objects of nature, the vast basaltic cavern, called Au-ua-vine, or the harmonious grotto, a name now connected, as every thing is, with Fingal; but which may arise, either from a melodious sound, produced by the percussion of the waves at the furthest extremity, or from the exact order in which the columns are disposed [12]. Height of the entrance fifty-six feet, breadth thirty-five, thickness of the exterior vault twenty. The depth, or length of the cavern is no less than 140 feet; and when St. Fond has represented the exterior light as penetrating the whole, he has committed a great error in perspective.

TIREY.] To the north west of Mull, are the isles of Tirey and Col, the former producing a most beautiful marble, of a rose colour, penetrated with small irregular crystals of green hornblende, and which the French naturalists have from the name of the isle called Tirite, no similar marble being any where found. Tirey is generally plain and fertile. Col, on the contrary, is rocky, but has several small lakes, replenished with fish. Dr. Johnson has paid a deserved tribute to its lord [13].

SKEY.] Another group consists of Skey, in the Scandinavian styled Skua, and the surrounding isles. Skey is the largest of the Hebudes, being about forty-five English miles in length, and about twenty-two in breadth. Inhabitants about 15,000; chief exports black cattle and small horses: the land, as usual in the Hebudes, rough and hilly. Muggastot is the residence of the Lord Macdonald, Dunvegan that of Mr. Macleod. At Struan is a Danish fort, sixty feet diameter, and eighteen high [14]. A high hill, near Talyskir, presents a series of basaltic columns, the most northern of this class: pillars pentagonal, and about twenty feet high *. Dr. Johnson, and his attendant Mr. Boswell, have well described the state of life and manners in Skey. The houses are chiefly turf, covered with grass. The face of the country wild, heathy, and deluged with continual rains. To the south of Skey are the isles Rhum and Eig: the first still produces red deer, an animal now rare in the isles; and in Eig is a curious cave, with forty skeletons, remains of the people here slain by a Macleod. To the N. E. of Skey are Raza and Scalpa; the harbour of Portree is protected by the former isle, and has a village of the same name, the only one in the country. The other isles in this groupe offer little memorable. Canna and Eig contain basaltic pillars, and in the former is Compass Hill, which strongly affects the needle.

EXTERIOR HEBUDES.

RONA.] It now remains to give some idea of the exterior chain of the Western Isles, forming, as it were, a barrier against the Atlantic. Two small and remote isles

[11] Garnett, I. 266. [12] St. Fond, tome ii. p. 59. [13] Journey, p. 295. [14] Pennant, pl. 36.

* On the opposite side of the isle, near Portree, is another basaltic rock, of great height. Stat. Acc. xvi. 140. In Portree parish is a large cave, full of curious stalactites. Ib. 147.

have

have attracted considerable notice. The first is that of Rona, about twelve leagues to the north west of Cape Wrath, and about thirty leagues west from the Orkneys. This little isle, with its companion Suliska, or Bara, has almost escaped from the Scotish maps, being little known and rarely visited. In the last century Sir George M'Kenzie, of Tarbat, afterwards Earl of Cromarty, drew up a short account of Rona, from the oral information of inhabitants, at that time consisting only of five families [15]. As the isle could only support thirty inhabitants, any supernumeraries were sent to Leuis, to their lord, the Earl of Seaforth, to whom they paid yearly a small tribute of meal and feathers. Drift timber supplied their only fuel: he adds, that the wool of their sheep was bluish, and ascribes the same colour to those of Hirta, or St. Kilda.

HIRTA.] The small isle of Hirta, or St. Kilda, must have attracted much notice, even in Lesley's time, for in his map he has represented it as about six times the size of Skey, while in truth it is only two miles and a half long, by one mile in breadth. St. Kilda is about twelve leagues to the west of North Vist; and has been repeatedly described, the singular manners of its inhabitants having excited considerable attention, and for a minute account, the reader must be referred to Martin and Macauley. Sheep abound here, and in the little isles adjacent, probably of the same kind with those of Shetland; but the late accounts say nothing of the colour, and only speak of the fecundity.

LEUIS.] Having thus briefly mentioned these remote and little visited isles, the plan here followed must be resumed by some account of Leuis, the principal island of the Western chain. It is about fifty miles in length, by twenty in breadth. The face of the country consists of a heathy elevated ridge full of morasses south west to north east; but near the shores are several verdant vales capable of cultivation. The Harris, or south end of this isle, is still more mountainous, and presents what is called a forest, because some deer are there found. James VI. attempted to introduce industry into the Hebudes by planting a Dutch colony at Stornaway in Leuis; but it was soon extirpated by the inhabitants *. Stornaway is however now a considerable and flourishing town, with an excellent harbour; the view from which, far to the east, presents the rugged mountains of Sutherland and Ross; and near it is the seat of the Earls of Seaforth, formerly proprietors of the island [16]. Besides cottages, there are about seventy houses covered with slate. The seasons in Leuis are oppressed with rain, as usual in the Western highlands and isles; but there is a considerable fishery. The crops are oats, bigge, and potatoes; no trees will thrive except alder, and mountain ash; and hardly a shrub appears: but there are many black cattle and sheep; nor is there any want of small horses. But the chief resource of Leuis must be the fishery, till industry shall have found the means of draining the upland marshes, and spreading an exuberance of lime as manure. At Classernes is a remarkable judicial circle, consisting of an avenue of thirty-nine stones about seven feet high, closing in a circle of twelve stones with one in the centre thirteen feet in height.

NORTH VIST.] To the south of Leuis is North Vist, about twenty-two miles in length from east to west and about seventeen in breadth north to south; for recent discoveries have restored this isle to its proper form, among many other improvements which

[15] Monro's Descript. of the West. Isles, in 1549. Edin. 1774. Duodecimo, p. 63. The Stat. Acc. xix. 271, adds nothing.

* Mr. Marshall, in his Travels in Holland, &c. vol. i. p. 175, observes that, in the opinion of the Dutch, the only mean of establishing a fishery in the west of Scotland, would be to build a city, and make it the seat of the whole undertaking, as he there explains at length. But such a city would be far better situated on the western coast of Scotland, as the example of Stornaway proves. There is no town between Campbeltown and Thurso, a space of 300 miles, though there seems to have been one on Loch Tong. Knox, ii. 473.

[16] Stat. Acc. xix. 241.

have

have taken place within these few years in Scotish geography. The face of the country corresponds in general with that of Leuis; and trees are equally unknown. Potatoes are generally cultivated. Westerly winds, with rain or fog, usurp two thirds of the year. Lord Macdonald is the proprietor [17].

South Vist.] The small isle of Benbecula, and some others, lie betwixt North and South Vist; the latter is about twenty-three miles in length north to south, by about ten in breadth west to east. The morassy central chain extends also through this isle; but to the east are dry hills covered with heath and verdure. The productions also resemble those of Leuis; and there are many small lakes full of excellent trout. Chief exports black cattle and kelp. This isle is also naked of wood.

No account having appeared of the mineralogy of the exterior Hebudes, the author was anxious to remedy that defect, and applied to the noble proprietor, the Earl of Seaforth, who is himself conversant with that science, and who kindly remitted some interesting materials. In the year 1800 there was privately printed at Edinburgh, a "Report of the Island of Leuis, and Estates of Kintail and Lochalsh, by the Rev. Mr. Headrick, contained in Letters to the Right Hon. Lord Seaforth, the proprietor;" from which the mineralogical portion shall be extracted.

"Upon the mineralogy of Leuis, it will be unnecessary to take up much of your Lordship's time, as, from the short hints contained in your Lordship's letter, it appears you have already formed a very correct idea of that.

"A vast body of breccia, or coarse plum-pudding stone, runs from the west of Arnish to beyond Grace. The stones of which it is composed have evidently been worn and rounded, in the bottom of the sea. The harder species of this stone are cemented by silex and iron, which seem to have undergone a partial vitrification. In other parts, the cement is an indurated clay, which dissolves by the weather. In the peninsula about Aignish, and on the opposite shore, near Back, the cement is a red calcareous clay, or species of clay-marl, which slightly effervesces with an acid. Hence, I infer, that this rock has, at one time, occupied the whole of Broad Bay, and that the land has, at one time, been much more extensive than it is now.

"Through this body of plum-pudding stone, run various veins of spar of lime, though I saw none of such magnitude as to afford being worked, with a view to burn into lime. There are also various veins of whin-stone, running nearly from south to north. The most remarkable of these is one to the east of Grace, and which also appears on the opposite shore near Garrabost. It is composed of large cubical stones, arranged in the form of a regularly built wall. There is another remarkable dyke of this sort at Stornaway, on part of which the old castle stands. There it assumes the shape of rude columnar basalt.

"To the east of Grace, where this plum-pudding rock joins the granite, I found a body of limestone interposed betwixt them; though at that part inaccessible, and very irregular in its quality. Also, below Garrabost, where the plum-pudding rock is cut off on that side, I found a vein of spar of lime, which seemed worthy of being followed out, were there not many other resources for procuring lime at much less expense. To these veins of limestone, I impute the stalactites, and stalagmitic incrustations, which are found in the seal cove of Grace, and in many other caverns which the sea has formed along these coasts. An excess of the carbonic acid dissolves limestone in water; and when this water gets to a cavern, where it is exposed to slow evaporation, the excess of carbonic acid, which occasioned the solution, flies off, leaving crystallized carbonate of lime in the form of icicles, or of a crust, upon the rocks.

"At the head of the bay, south east from Aignish, the plum-pudding stone exhibits a

[17] Stat. Acc. xiii. 300.

smaller grain, like red freestone, and is arranged in regular strata. Some of these strata might be used for building; though some of them are cemented by calcareous clay, and would crumble down by exposure to the weather. All the plum-pudding rocks are stratified; though most of the strata are of great thickness, and many of them irregular. They are intersected by cracks, which run either from east to west or from north to south.

" The plum-pudding rock is cut off towards Chicken Point and at Garrabost, by a very shattery species of lava, which includes veins of iron stone, and in some places of terras, or puzzolane earth. The same appears at Tolsta Point, and in some places on the west side of Ness: a proof that all this extent, which is now so much cut and mangled by the sea, must at one time have formed a solid body of land, extending, perhaps, far beyond the extreme points or fragments of it which now remain.

" All the other rocks I have seen in Leuis are granites, of various species and qualities. Near Stornaway they are extremely shattery, and full of cracks. Towards Birken Isles Loch, or Loch Erisort, they become micaceous; towards Loch Dungeon, and in various parts of Loch Seaforth, they are arranged in thick strata, which might afford good stones for building. These rocks include many beautiful siliceous crystals, and nodules of chalcedony. I have selected a few specimens, with a view to try the effect of polishing them.

" All these rocks are intersected by veins or dykes of whin-stone, which run nearly from south to north, inclining a few points towards north-west and south-east. Some of these veins are decomposed by the weather. Others are composed of stones built into the form of a regular wall, like that at Grace, and a few affect a columnar form. Many of these veins, especially in the district of Uig, are filled with talcite, a very hard porous species of stone, of which they make mill-stones. In such cases, the interstices are filled with a soft species of talc, in small laminæ, called here *sheep's silver*.

" In the mountains of Uig are many veins of this soft talcky matter, and also in other places; for they all run across the country in the direction already specified. I have long thought of converting this substance to use, and have made many experiments upon it; though I must confess I have not yet had leisure to bring my experiments to a satisfactory conclusion.

" With the whinstone veins or dykes already mentioned, which intersect the rocks, are connected veins of spar of lime. Many of these also include veins of iron-stone, or ore of iron.

" The most curious veins of that sort are at Rebbock Head, and westward. There I found the most beautiful, regularly formed, and semi-transparent rhomboidal crystals of lime, both arranged in veins, and also in detached nodules, in the hollows of the rocks. In similar hollows, I saw also nodules of chalcedony, which on one side adhered firmly to the rock, and even included loose chips of stone. On the other side, they appeared blistery, like some metals which shrink after fusion. Here also I saw a vast vein, composed of rounded stones, which are cemented by means of spar of lime, regularly crystallized. From a distant sea inspection, I was led to expect a vein of metallic ore there; and this led me to make an effort to examine the place with attention; but the boatmen who conveyed me, tired of me, and left me to find my way over the rocks. I was thus obliged to content myself with a cursory view; and the only metallic vein I discovered was an immense dyke, faced with regularly built whin-stone, including subordinate veins of iron-stone and ore.

" Besides the whin-stone and talcky veins which intersect the granite, there are innumerable veins of siliceous spar running in all directions. There are also veins of soft micaceous schistus, chiefly towards Loch Seaforth, which seem to indicate that veins of slate are not remote.

" I took

"I took some specimens of a vein of this sort from near the eastern mouth of Loch Fly, with a view to try whether it might not be manufactured into stone-ware, of a new and curious quality. But all the pulverisation we could give it, did not make its particles adhere with water. Perhaps a more perfect pulverisation, or mixture with other clays, may produce the intended effect; and I reserve a small piece to be tried in some pottery near Edinburgh.

The SCHAUT ISLES.] "The Schaut Isles are certainly the greatest curiosities my eyes ever contemplated; and were they known, men fond of viewing all that is grand and uncommon in the productions of nature, would come from the remotest corners of the world to see them.

"They consist of two ranges or strata of basaltes, placed above each other, with limestone, schistus, and a stratum that seems to be sulphur, or hepar of lime, interposed between them. This last stratum has always been taken for common limestone by the people, which it very much resembles; but it does not effervesce with acid, and contains thin veins of beautifully crystallized gypsum, formed from its oxygenation within its cracks and cavities. Hence it would not burn into lime, though perhaps it might make gypsum, at least after the sulphur is oxygenated by exposure to the air.

"The limestone is of three colours, blue, whitish-grey, and sparry. Much of it is contaminated by martial pyrites, beautifully crystallized, and many of them indented into each other in a curious manner. This circumstance, and the convulsed state of these strata, would render much attention necessary in selecting limestones there fit for burning. The limestone, and several of the rocks contiguous to it, contain various species of sea-shells, petrified, and of the most perfect form. The limestone and other strata appear at various points along the north side of Garve Island. They appear also in the neck that joins a remarkable black rock with that island, where there is a commodious bay, with good anchorage.

"This black rock is a ledge of basaltes, less perfectly formed than the mass which rests upon it. It is the basis or inferior stratum, on which the columns of the Garve Island rest. It dips rapidly to the south west, and rises to the north east. This rock has a remarkable natural arch under it, which is the common passage for boats.

"Passing over to the Green Island, which projects a ledge of rock, covered by the tide, to meet the black rock, we find it wholly composed of the same sort of basalt with the latter. It every where affects a columnar appearance, though the columns are rude and ill-formed.

"On its north-west corner are seen all the strata of schistus and limestone, which run below the columns of Garve Island. On the south west side, the limestone projects like a vein; and there is here a vast mass of excellent clay marl, formed from its decomposition. Above this place, a vast body of schistus is exposed to view. It resembles that which accompanies coal, only more indurated; and, like coal-schistus, it contains many strata of iron-stone.

"This schistus is immediately under the soil of a part of the Green Island. There, were it wrought down below moisture, it might yield excellent flags, for paving storehouses for salt and fish.

"The basaltic columns of Garve Island, though amazingly high, are not completely detached, with smooth surfaces and regular joints, as take place in basaltic columns of the most perfect kind. They have all a slight inclination towards the south-west, and are intersected by various cracks or planes, running mostly at an angle of 45° with the columns. A tail of rocks projects towards the south-west from Garve, which exhibits many whimsical varieties of basaltes. In one rock they are waved, rising at an angle of about 45°; but are suddenly bent into a perpendicular ascent, without any visible fracture, or rupture of their continuity. In another rock they are thrown almost into

a horizontal position, with the ends of the columns sticking out towards the north, as if the rock had been over-turned by more than gigantic force. Two columnar rocks project boldly from the sea, resembling two massy square towers, which defy the fury of the waves.

" On the north east corner of Donald Bane's Island, or Y-kill, which is joined to Garve by a narrow neck, there are several clusters of basaltic columns of the most perfect kind. They stand perpendicular, are perfectly smooth, extremely hard; are mostly five-sided, with their angles cut off; and are as perfect as if formed by the most skilful mason. They are regularly joined at the same horizontal elevation. Some ranges do not exceed eight or ten inches in height, from joint to joint; the rest are from three to four feet. The joints are most curiously formed. Every lower piece has a smooth cavity on the upper end, which is exactly filled by the convexity of the piece which rests upon it. These basaltic rocks contain many nodules of zeolite, and various siliceous crystals.

" The soil of these islands, where it is not naturally wet, is excellent, and produces every species of sweet grasses without culture. The only exception to this remark is a part of the Green Island, where the soil rests upon the schistus already described. The soil formed from the decomposition of basalt is universally good.

" These islands are better adapted for sheep, and a few goats, than for cows, which cannot be kept from falling over the rocks; an accident that happened while I was there. I should think the fine woolled Cheviot breed would thrive well on them. I mentioned this to the tacksman; but he said that sheep were too apt to get fat there, and then they became lazy, and fell over the rocks like cows. But this objection is easily obviated by stocking more fully, which would prevent them from getting more fat than is necessary. Cows cannot get at half the grass.

" I am also apt to think, that these isles might form a commodious fishing station. The seas around swarm with fishes of various sorts, and there is a commodious landing-place for boats between Garve and Y-kill.

" The broken columns of basaltes might furnish excellent stones for building; and are well adapted for building breast-works, and quays for shipping, were such works to be established in the West Highlands.

" But I beg your Lordship's pardon for dilating so much upon this subject. Having dropped into it by accident, I run on without adverting that your Lordship is much better acquainted with the structure of these rocks than myself.

" The soil of Leuis is mostly moss upon rock. The moss is generally of a firm, dense quality, highly susceptible of improvement, and yields black peats hardly inferior to the common Scotch coals. The only exception to this remark is a stripe of land from the peninsula of Aignish to Garrabost, and some patches near Bible, where the subsoil is of a marly quality, which resists the growth of moss above it, except where the surface is naturally wet. There is also a considerable extent of soil in the west of Ness that falls under this description, where much of it has been injured by paring off turf. Most of the soil here is well adapted for turnips and green crops of every species, and possesses all the means of improvement within itself.

" In all other places where I found soil of a good quality, or which carried sweet grasses without culture, the soil had evidently been formed by small particles of shells blown up from the sea upon the moss. This was evident from inspecting these soils with a glass, where many particles of shells were discovered, and they effervesced with an acid. The only misfortune is, that, in many cases, too great a quantity of these shells have been blown up upon the land, and has rendered it sterile from excess, while a moderate proportion would have proved highly beneficial."

The noble proprietor also imparted some valuable information concerning these remote

remote islands, which have been too much neglected by travellers, and which shall here be given nearly in his own words. The granite of the Leuis is of a vast variety of colour and grain, but chiefly black and red of a fine grain. In many places it is mixed with much mica, and with quartz, felspar, &c. in detached portions, where in some spots it contains great quantities of schorl. It is intersected with many dykes or veins of basalt. In the mosses or peat-moors, which are numerous, there is abundance of bog ore of iron. The isles of North and South Vist and Barrow are supposed to be of a similar structure with Leuis and Harris. In North Vist there is a large track of sea-sand, which might be valuable in making glass. It must not be forgotten that the isle of Leuis produces, in the parish of Nig, that scarce mineral molybdena. Dr. Walker has somewhere asserted that the little isle of Bernero consists of amianthus, but this information seems to have been derived from some ignorant observer, who may perhaps have mistaken a decayed schorl for that substance. Martin, in his account of the Western Isles, has engraved a plan of a Gothic court of justice, such being commonly styled Druidic temples by antiquaries. The place where it is situated he calls Classerness; but the proper name is Calernish, in the south-west part of the isle*. In the same neighbourhood, at Dun Carloway, there is one of those remains of antiquity called Picts houses, which is very well preserved. Both are in the parish of Carloway, which is now annexed to that of Lochs.

Orkneys and Shetland Isles.

Orkneys.] The islands of Orkney and Shetland remain to be described. The Orkneys form a numerous group, around the Main Land, or what, by some new and fabulous term, is called Pomona[18]. The Main Land is about twenty-five miles in length east to west, by about thirteen in breadth north to south. Kirkwall, the chief town of the Orkneys, contains about 300 houses; and has a stately cathedral dedicated to St. Magnus, length 226 feet, height of the roof 71, of the steeple 133. It is built of freestone, and by the good sense and taste of the Orcadians is preserved more entire than even the Cathedral at Glasgow[19]. Opposite stands the bishop's palace, now called a castle. The chief exports of Kirkwall are beef, pork, butter, tallow, hides, calf skins, rabbit skins, salted fish, oil, feathers, linen yarn, and coarse linen cloth, kelp†, and in fruitful years corn. The chief imports are wood, flax, coal, sugar, spirits, wines, tobacco, and snuff, flour and biscuit, soap, leather, hardwares, broad cloth, printed linens and cottons. In 1790 the exports were valued at 26,598*l.*; and the imports at 20,803*l.* Manufactures are linen yarn, and coarse linens, and kelp: this last was introduced about sixty years ago, and has been since diffused over the Highlands and isles. In most parts of the Main Land the soil is good, though shallow, with a calcareous bottom. The horses are small but spirited; and the cows, though also small, yield excellent milk. The sheep in the islands of Orkney are computed at 50,000. Swine also abound of a dirty white colour, and diminutive size. The numbers of sea fowl may be easily imagined. The Norse language has yielded to the English, and the manners of the people are singularly civilized for so remote a region. The Main land contains several of those edifices called Piks houses, and on its western side at Yestnaby, near the house of Skeil is a singular natural pavement,

* There is no good map of Leuis. Mr. Chapman has been employed in forming one at an expense of nearly 3000l.

[18] The old accounts are Wallace's 1693, and Brand's 1701; the modern, the Statistic Survey. See also an able account of the Orkneys by Dr. Barry, Edin. 1805, 4to.

[19] Stat. Acc. vii. 531.

† Sanba produces great quantities of kelp; when the Orkneys in general may yield 2,500 tons, 500 and 600 are drawn from that isle only. S. A. vii. 455.

consisting

consisting of stones figured in various forms, resting on a bed of red clay reclining on a high rock: the length of this singular pavement is about a quarter of a mile, breadth about 20 feet[20]. The Ward Hill of Hoy, the highest in this region, (1620 feet,) stands in the island of the same name, the south-east promontory of which is erroneously called Walls in the English maps, instead of the native name Waes: near its bottom is the noted dwarfy stone, about 34 feet long by 17 broad, and 8 high, hollowed out by art, probably for the residence of some hermit.

The inhabited islands of Orkney are computed at 26, and the people at 23,053[21]; the bases are chiefly sand-stone, and sand-stone breccia, as appears from Mr. Jameson's recent Mineralogy of the Scotish Isles. Iron is found, and perhaps some lead; but the mention of silver and tin seems fabulous. Hazles are seen, and sometimes willow, and some ash trees; thorn bushes, and plumb trees, still exist in the Bishop's garden. But in the morasses, trunks of ancient trees are found, sometimes 30 feet in length. It is surprising that in the present progress of every art, numerous experiments have not been made to discover some tall tree, which can endure the spray of the ocean; for if a fence of such were first reared, many other kinds might flourish under its protection. The mountain ash, or the birch, which in Lapland is the last offspring of expiring vegetation, may perhaps be found to answer this description.

SHETLAND.] The islands of Shetland present another group similar to those of Orkney; with a Main Land or chief island in its centre. The Main Land is much intersected by the sea; and is about 57 miles in length by about 10 or 12 miles of medial breadth*. The other isles are generally small, yet 26 are said to be inhabited. "On viewing these islands in general, a wonderful scene of rugged, bleak, and barren rocks presents itself to our view. No tree or shrub is to be seen, to relieve the eye in wandering over these dreary scenes. Sometimes, however, a few scanty portions of cultivated ground catch the eye of the traveller, exciting emotions of pleasure, and forming a striking contrast to the barren heath-covered mountains, which skirt them. The western part presents many scenes as wild and sterile as can well be conceived; grey rocks rising from the midst of marshes or pools, and shores bounded by awful sea-beat precipices, do not fail to raise in the mind ideas of desolation and danger.

"The coasts are in general rugged and precipitous, presenting in many places scenes truly grand and magnificent; vast rocks of various heights, dreadfully rugged and broken, opposing their rude fronts to all the fury of a tempestuous ocean; which, in some places has formed great detached pillars, in others has excavated grand natural arches and caverns that mock all human magnificence; and strike the beholder with that awe and wonder which must affect every one on viewing these amazing wrecks of nature[22]."

Such is the animated description of a late writer; who adds that the east side of the Main Land, and other isles, is comparatively low, but the west lofty and rugged. This is well known to be the case with most mountains and islands, because the winds and tempests from the west have more power than those from the opposite quarter. The hills in the Main Land run in three ridges from north to south; they are generally

[20] Wallace, p. 24. Brand, p. 43.

[21] S. A. xx. 612.

* We have better charts of the coasts of New Holland, than of the isles of Orkney and Shetland. Captain Donnelly's chart of the Shetland Isles, seems the most accurate, in which the Main Land corresponds in length with Leuis, while Ainsley's would give a length of almost 90 miles. Yell and Unst, seem also more properly disposed in Captain Donelly's map. The Danish Captain Von Lowenorn (Zach's Geographical Journal, May, 1799) found that the Shetland isles were about one third shorter than represented in the English map (Preston's); which also puts the northern extremity half a degree further north, than it was found by minute observations. Lowenorn published a map of these isles, in 1787 An interesting account of the Shetland isles has lately been published by Dr. Edmonston, 2 vols. 8vo.

[22] Jameson's Min. p. 2, 3. 8vo.

round

round and of little height. Ronas, the highest, stands detached in the north-west corner of the Main Land; and is about 1500 feet above the level of the sea. When the same writer attempts to establish that all chains of mountains run according to the length of the country, he espouses a mere theory in opposition to stubborn facts. The mountains of North America, the Uralian and some other chains in Siberia; the transverse chain through the centre of Africa east to west, all establish the contrary position. In Europe the mountains of Spain, the Alps, the Carpathian mountains; and not to crowd examples, those of Ireland, Scotland, and even of England, have no connection with the length of the country, nor can a stronger proof be produced of the boldness of theory than thus to remove even mountains from their seats; which proceed in every direction, bend and terminate without any visible cause, and have seldom any connection with the form of a country, as the destructive powers of nature external and internal assail mountains even more than plains.

The hills in Shetland are chiefly composed of sand-stone breccia, &c. The basis seems gneiss, and micaceous schistus, which are sometimes exposed to the air. Lime-stone is also found and some granite; but on the whole the mass is arenaceous. A kind of brown wacken is found in Papa Stour; where may also be traced steatite, calcedony, red jasper, and fluate of lime. In Unst, the most northern of these isles, appear hills of serpentine, containing actinote, labrador hornblende, tremolite, and talc; and the Shaw, the most northern point of this isle, and of the British dominions, consists chiefly of gneiss. Unst also produces iron-stone, jasper or rather serpentine, pure rock crystals, and garnets of an elegant form. This remote isle supplies black oats, bigg, potatoes, cabbages, and various garden roots and plants, particularly delicate artichokes[23]. In general the granite, and micaceous schistus, appear furthest to the north and west. Sappare is found in the south-west cliffs of the Main Land; and it is said there are appearances of copper in the same quarter. It was in the form of pyrites, and was worked for some time, till the vein gradually decreased, and was abandoned[24]. What is called the bog ore of iron seems to abound in Fetlar, and of excellent quality[25].

The climate of the Shetland isles is variable, and disturbed with rains and thick fogs. The frosts are seldom severe, and snow rarely continues long on the ground. The inhabitants are indeed sufficiently wretched, without additional evils; and a benevolent government ought to pay a particular attention to those distant prisoners. The corruscations of the Aurora Borealis illuminate the long gloom of winter, and delight the

[23] Stat. Acc. v. 185.

[24] Jameson, p. 21.

[25] S. A. xiii. 283. From Mr. Jameson's Mineralogy of the Scotish isles, (2 vols. 4to.) it appears that Ailsa consists chiefly of mingled hornblende and felspar: Arran of reddish sand-stone, like Shetland, with veins of basalt and pitch-stone; but Goatfell presents micaceous schistus and granite, with yellow crystals, or mock topazes, commonly sold as Cairngorm stones. Bute, similar. Ilay, lime-stone, with granular quartz. Jura, granular quartz, with veins of basalt: this granular quartz is by Kirwan called arenaceous quartz, or primitive siliceous sand-stone. Seil, slate; Lismore, lime-stone, with basalt. Mull has much basalt, with sand-stone, lime-stone, &c. in the south-west beautiful granite. Icolm-kill, mostly granite, and hornblende rock, with one quarry of marble. Coll, gneiss, with granite. Tirey, hornblende rock, gneiss, and basalt, with a quarry of beautiful marble. Eig, basalt, with lime-stone, &c. Rhum, red sand-stone, with veins of basalt; mountains, hornblende, and felspar. Canna basaltic; that at Compass hill affects the needle. Skey, basalt, with hornblende, lime-stone, &c. Rasa, sand-stone, and beautiful porphyry, with a blue basis.

The exterior chain of the Western Isles was not visited by Mr. Jameson; but Leuis seems to abound in lime-stone, while Bernera is said to consist of amianthus.

The Orkneys consists almost entirely of sand-stone, massy, and schistose; at Skeil, on the west of the Main Land, the sand-stone, which looks rusty, as if slightly impregnated with iron, is worn (as already mentioned) into many singular forms, by the action of the weather, a circumstance which has greatly impressed the old describers of the Orkneys. A few miles around Stromness are granite, gneiss, micaceous schistus, and hornblende. Gramsey abounds in slate. Barry 37.

inhabitants

inhabitants, who call them *merry dancers*. The arable land is mostly near the coast, and produces a coarse kind of oats and bigg. Potatoes have lately formed an addition of singular advantage; but turnips, parsnips and carrots, are confined to the gardens of gentlemen. The chief food of the inhabitants consists of fish, and various kinds of sea-fowl, which cover the rocks: the captors of the last shew singular skill and intrepidity, and often meet with a violent fate amidst the stupendous precipices. The cattle are rather larger than those of Orkney, and the butter excellent if properly prepared. Sheep are not uncommon, and have been recently praised for the fineness of their fleece. The horses have mettle and beauty, and on account of the singular minuteness of their size have become objects of luxury and curiosity in England. The swine are small, and little propagated because they injure the pastures; an evil easy obviated by the simple practice of putting a ring through the nose.

LERWICK.] Lerwick, the chief town or rather village, stands on an excellent harbour called Brassa Sound, formed by the little isle of Brassa on the east of the Main land, and formerly greatly frequented by the Dutch fishers. Lerwick is an irregular village, perched on rocks; and contains about 150 families. Near it is one of those rude edifices called Piks houses; and several others appear in the isles of Shetland, particularly in Fetlar: there is also a rock abounding with iron ore which affects the compass.

The herrings appear off Shetland in vast columns, in the month of June, altering the very appearance of the ocean, which ripples like a current. These columns have been computed to extend five or six miles in length by three or four in breadth, and in bright weather reflect a variety of splendid colours. They afterwards divide to the east and west of Great Britain, furnishing a providential supply of food to many barren districts. The chief exports of Shetland are fish of various kinds, chiefly herrings, cod, ling, and torsk, or tusk. The inhabitants of the Shetland islands in 1798 were computed at 20,186[26], more than the country can well support, especially in the present deficiency of intercourse with the Dutch. They have of late become addicted to the use of tea and spirituous liquors, which will infallibly contribute to lessen the population. In this distant region there are neither roads nor bridges, which may be pronounced the first steps in any country towards the progress of industry. The same deficiency occurs in the Orkneys, and even in the northern extremity of Scotland; where however a road has been recently opened between Ullapool and Dornoch. The Swiss form roads even in the Alps; and certainly the Scotish Highlands do not offer more insuperable barriers to this most essential of all improvements.

[26] Stat. Acc. xx. 612.

Arrowsmith direxit

From Various Surveys of Ireland.

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IRELAND.

CHAPTER I.

Names. — Extent. — Original Population. — Progressive Geography. — Historical Epochs. — Antiquities.

NAMES.] THE large and fertile island of Ireland, being situated to the west of Great Britain, was probably discovered by the Phœnicians as early as the sister island*. On the first dawn of history, and when the north-west of Europe was as obscure to the Greeks, as the islands on the north-east of Siberia were recently to us, it would seem that Ireland constituted one of the Cassiterides. The poems ascribed to Orpheus deserve no credit, but it appears that the island was known to the Greeks by the name of Juverna, about two centuries before the birth of Christ. When Cæsar made his expedition into Britain, he describes Hibernia as being about half the size of the island which he had explored; and while the Romans maintained their conquests in the latter region, Ireland continued of course to be well known to them, and Ptolemy has given a map of the island which is superior in accuracy to that which represents Scotland. Towards the decline of the Western empire, as the country had become more and more known, and had been peopled with various tribes, the Romans discovered that the ruling people in Ireland were the Scoti: and thenceforth the country began to be termed Scotia, an appellation retained by the monastic writers till the eleventh century, when the name Scotia having passed to modern Scotland, the ancient name of Hibernia began to re-assume its honours. It is supposed that this name, and the Gothic denomination Ireland, are mere modifications of the native term Erin, implying the country of the west.

EXTENT.] Ireland lies between 51° 19′ and 55° 23′ north latitude; and between 5° 19′ and 10° 28′ west longitude. Its greatest length, measured on a meridian, is from the Stags of Cork harbour, to Bloody Farland point in the county of Donegal, which may be reckoned 235 miles; and the greatest breadth, measured nearly on a parallel of latitude, is from the western point of Mayo, to the mouth of Strangford Lough, 182 miles. The breadth, however, is very unequal in consequence of the deep indentations on the western coast, so that Galway and Dublin bays are not 120 miles distant from each other; and there is not a spot in the island more than about 60 miles from the sea†. The superficial contents may be computed at 30,370 square

* For much recent information concerning Ireland, the author is indebted to Mr. Hincks of Cork, a coadjutor in the New Cyclopedia; and it is generally given in his own words. The want of recent materials was regretted in the first edition.

† Beaufort's Mem. of a Map, &c. p. 14. The measures are given in English miles, which are less than Irish ones; eleven of the latter being nearly equal to fourteen of the former.

miles, or 19,436,000 acres; and the population being about four millions, there will be about 130 inhabitants to each square mile.

ORIGINAL POPULATION.] It is probable that the original population of Ireland passed from Gaul, and was afterwards increased by their brethren the Guydil from England. About the time that the Belgæ seized on the south of England, it appears that kindred Gothic tribes passed to the south of Ireland. These are the Firbolg of the Irish traditions; and appear to have been the same people whom the Romans denominated Scoti, after they had emerged to their notice by not only extending their conquests to the north and east in Ireland, but had begun to make maritime excursions against the Roman provinces in Britain. But Ireland had been so much crowded with Celtic tribes, expelled from the continent and Britain, by the progress of the German Goths, that the Belgæ almost lost their native speech and distinct character; and from intermarriages, &c. became little distinguishable from the original population except by superior ferocity, for which the Scoti, or those who affected a descent from the Gothic colonies, were remarkable; while the original Gael seem to have been an innocuous people.

PROGRESSIVE GEOGRAPHY.] The map of Ireland, by Ptolemy, above mentioned, is the first geographical document of the island. The general shape, rivers, and promontories, are delineated with as much accuracy as could have been expected. Nay, as we advance into the middle ages, the geography of Ireland becomes more obscure. The chief tribes mentioned by Ptolemy are the Darni upon the north-east, the Venicni and Robogdii on the north-west. Beneath them are the Nagnati, Auteri, and Gangani, on the west; the Erdini in the centre; and the Voluntii, Eblani, and Cauci, on the east; succeeded by the southern tribes of the Menapii, Brigantes, Vodii, Ivelni, Velabri, and Luceni. Ptolemy also mentions ten towns; of which the chief is Eblana, now Dublin. In the middle ages we find the Dalriadi on the north-east; and the Crutheni on the north-west. The large tribe of Nelli occupy much of the centre. The Voluntii seem transformed into the people of Ullagh; the Erdini of Ptolemy yield the name to Argialla; and the Nagnati to Maigh Nais. The Gangani of Ptolemy seem the Galeng of the middle ages; the Menapii, &c. must be sought in Muman, or present Munster. The towns mentioned by Ptolemy might also be traced with some degree of accuracy.

The ravages of the Danes, in the ninth and following centuries, cannot be supposed to throw much light on the progressive geography of Ireland: but the settlements of the English under Henry II. certainly contributed to that end, for Giraldus Cambrensis at that period composed his description of Ireland, which amidst numerous fables contains some curious facts: and the geography of Ireland was little better known till the reign of Elizabeth, when Stanihurst published his description, which forms a part of Holinshed's history, and was followed by that of Camden. The most remarkable distinction introduced by the new invaders into Ireland was that of the English Pale, or circuit of a few counties around Dublin, within which the English language was chiefly spoken. So inconsiderable indeed were the English possessions in Ireland, that the monarchs only assumed the style of Lords of Ireland, till the reign of Henry VIII., when King of Ireland became a part of the sovereign's style. Nor was Ireland completely subjugated till the reign of the first James, who adds this merit to that of founding the American colonies; but mankind will ever be infatuated by the triumphs of war, and prefer a meteor to the pure light of a pacific reign. In this, and the succeeding reign of Charles I., the present division into counties was completely established; and Sir William Petty's survey of the island, the result of which was contained in his maps of the several counties, published in 1685, not only considerably added to the knowledge of the country, but has even been the ground-work of all the maps since published.

The present division of Ireland is as follows:

Province.	County.	Assize Town.
Ulster.	Antrim,	Carrickfergus.
	Down,	Downpatrick.
	Armagh,	Armagh.
	Tyrone,	Omagh.
	Londonderry,	Londonderry.
	Donegal,	Lifford.
	Fermanagh,	Enniskillen.
	Cavan,	Cavan.
	Monaghan,	Monaghan.
Connaught.	Leitrim,	Carrick on Shannon.
	Sligo,	Sligo.
	Roscommon,	Roscommon.
	Mayo,	Castlebar.
	Galway,	Galway.
Leinster.	Louth,	Dundalk.
	Meath,	Trim.
	Dublin,	Dublin.
	Wicklow,	Wicklow.
	Wexford,	Wexford.
	Kilkenny,	Kilkenny.
	Carlow,	Carlow.
	Kildare,	Naas.
	Queen's County,	Maryborough.
	King's County,	Philipstown.
	Westmeath,	Mullingar.
	Longford,	Longford.
Munster.	Clare,	Ennis.
	Limerick,	Limerick.
	Kerry,	Tralee.
	Cork,	Cork.
	Waterford,	Waterford.
	Tipperary,	Clonmell.

HISTORICAL EPOCHS.] The first historical epoch of Ireland is its original population by the Celtic Gauls, and the subsequent colonization by the Belgæ.

2. The maritime excursions of the Scoti against the Roman provinces in Britain.

3. The conversion of Ireland to Christianity in the fifth century, which was followed by a singular effect; for while the mass of the people retained all the ferocity of savage manners, the monasteries produced many men of such piety, and learning, that Scotia or Ireland became celebrated all over Christendom.

4. This lustre was diminished by the ravages of the Scandinavians, which begun with the ninth century, and can hardly be said to have ceased when the English settlement commenced. The island had been split into numerous principalities, or kingdoms as they were styled; and though a chief monarch was acknowledged, yet his power was seldom efficient, and the constant dissentions of so many small tribes rendered the island an easy prey.

5. In the year 1170, Henry II. permitted Richard Strongbow, Earl of Pembroke, to effect a settlement in Ireland, which laid the foundation of the English possessions in that country. There are, however, coins of Canute, King of England, struck at Dublin, perhaps in acknowledgment of his power by the Danish settlers.

6. Ireland began to produce some manufactures about the fourteenth century, and her sayes or thin woollen cloths were exported to Italy. It is probable that these were produced by the Bristolian colony, which had passed to Dublin, as mentioned in the description of England.

7. Richard II., King of England, attempted in person the conquest of Ireland, but being imprudent and ill served, nothing of moment was effected. The subsequent attempts of the English monarchs to accomplish this purpose need not be enumerated.

8. In the reign of James I. Ireland became entirely subjugated; and colonies of English and Scots were established in the north.

9. The chief mean of the assimilation of the countries having been completely neglected, namely, the universal institution of parochial schools, for the education of children in the protestant religion and English language, the Irish continued a distinct people; and being instigated by their fanatic priests executed their dreadful massacre of the English settlers in 1641. This insurrection was not totally crushed till Cromwell led his veterans into Ireland.

10. The appearance of James II. in Ireland to reclaim his crown, may also deserve a place.

11. The amazing progress of Ireland in manufactures and commerce, within these twenty years, may be classed as the most illustrious of its historical epochs.

12. The deplorable events which have recently happened in Ireland, have led the way to its union with Great Britain, a measure which it is eagerly to be hoped will be productive of great reciprocal advantages.

ANTIQUITIES.] Upon a review of the more ancient of these historical epochs, and of the monuments which may be considered as belonging to each, it must be considered that the edifices having been constructed of wood till the eleventh or twelfth century, it cannot be expected that any remains of them should exist. Stone was chiefly employed in the construction of funeral erections of various kinds; nor are barrows wanting in Ireland, being hillocks of earth, thrown up in commemoration of the illustrious dead. Other monuments commonly styled Druidic may also be found in Ireland; such as single stones erect, circular temples or rather places of judgment, and the like, which may more properly be ascribed to the Belgic colony *.

The conversion of Ireland to Christianity was followed by the erection of a vast number of churches and monasteries, the latter being computed to exceed one thousand in number; but all these edifices were originally small, and constructed of interwoven withes, or hewn wood; for St. Barnard, in the twelfth century, mentions a stone church as a singular novelty in Ireland.

But the Scandinavian chiefs must before this period have introduced the use of stone into the castles, necessary for their own defence against a nation whom they oppressed; and sometimes even subterraneous retreats were deemed expedient, of which Ware and others have engraved specimens. To the Scandinavian period also belong what are called the Danes Raths, or circular intrenchments; and some chapels, such as those of Glendaloch, Portaferry, Killaloe, Saul Abbey, St. Doulach, and Cashel, if we may judge from the singularity of the ornaments, which however only afford vague conjecture. But of the round castles, called Duns in Scotland, and of the obelisks engraven with figures or ornaments, few or none exist in Ireland. Under the Scandinavians the Irish coinage first dawns.

Of the eleventh and twelfth centuries many monuments, castellated or religious, may probably exist in Ireland. Brian Boro, King of Munster, having been declared sovereign of Ireland in the year 1002, he distinguished himself by his virtues and

* See Ledwich's introduction to Grose's Antiquities of Ireland, for Cromlechs in the county of Carlow, and a cave in Meath.

courage;

courage; and Dermid III. A.D. 1041–1073 was also an excellent and powerful prince. Under these monarchs and their successors, Tirdelvac and Moriertac, the power of the Ostmen or Scandinavians was considerably weakened. The native chiefs had been taught the necessity of fortresses, and were generally devoutly attached to religion; it is therefore to be inferred that many castles, churches, and monasteries now began to be partly constructed in stone by architects invited from France and England; but perhaps the round towers were erected by native builders.

The castles, churches, and monasteries, erected since the period of the English settlement might be counted by hundreds; and for them one general reference may be made to the works of Ledwich and Grose: yet it is to be regretted that in collections of that kind the edifices are not arranged in the chronological order, as nearly as can be judged, of their erection. Among smaller reliques of antiquity, the golden trinkets found in a bog near Cullen, in the south, deserve mention: as gold was found in Gaul, they are perhaps ornaments of the ancient chiefs brought from that region.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion.—Ecclesiastical Geography.—Government.—Population.—Army.—Navy.—Revenues.—Political Importance and Relations.

RELIGION.] THE legal religion of Ireland is the same as that of England; the same articles of belief being established, and the same orders of bishops, priests, and deacons composing the body of the Clergy, all of whom acknowledge the King as supreme head of the church. There are also similar ecclesiastical courts, but a convocation is never held even for the sake of form.

"The first preachers of Christianity in Ireland," observes Dr. Beaufort, "established a great number of bishoprics, which gradually coalesced into the thirty-two "dioceses that have for several centuries constituted the ecclesiastical division of the "kingdom. But when the country became impoverished and depopulated, by the "perpetual feuds, and frequent civil wars with which it was desolated for ages; it "was found necessary, at different periods, to unite some of the poorest of these "sees, in order that the bishops might have a competence to support the dignity and "hospitality incumbent on their station: and hence it comes that there are only 22 "prelates in the church of Ireland, 20 sees being united under 10 bishops. These "causes having had the same operation with respect to parishes, the 2438 parishes do "not form quite 1200 benefices, many having been consolidated by the privy council, "from time to time, under the authority of an act of parliament; and many others, "though but episcopally united, having been considered as only one living time out "of mind*." The consequence of this has been, that since the return of peaceful times, and the great improvement of agriculture, the value of Irish bishoprics and livings has become considerable, a few of the latter even exceeding 2000*l. per annum.* The large tracts of country, which many of these benefices contain, is such, that should the number of Protestants increase, a division of them will become necessary, as it is, in some instances, desirable at present. The bishops are lords of parliament; and four of them, in rotation, are members of the imperial legislature.

ECCLESIASTICAL GEOGRAPHY.] Ireland is divided ecclesiastically, as well as civilly, into four provinces; but the civil and ecclesiastical boundaries are far from coinciding. An archbishop presides over each, who has also his peculiar diocese. The seven bishops of the northern province are suffragans to the archbishop of Armagh, who is primate and metropolitan of all Ireland. The archbishop of Dublin is primate of Ireland, and has three suffragan bishops in the eastern province. The southern province, with its five suffragans, is under the jurisdiction of the archbishop of Cashel, primate of Munster. And the archbishop of Tuam, primate of Connaught, presides over the three bishops of the western province. These bishops are not even in form elected by the respective chapters, but are nominated by the King, and appointed under the great seal. The towns, from which many of the sees take their names, have not even a vestige of former consequence. The number of deaneries in Ireland is 33,

* Beaufort's Mem. p. 104.

and

and of archdeaconries 34. The archdeacons have not a visitatorial jurisdiction as in England, but the bishops hold a visitation annually, and the archbishops visit their suffragans every third year. The province of Armagh includes, besides the peculiar diocese of the archbishop, the sees of Meath, Kilmore, Dromore, Clogher, Raphoe, Down and Connor, Derry, and Ardagh. The last of these is now always joined to the archbishopric of Tuam. The province of Dublin, besides the archbishopric, contains the sees of Kildare, Leighlin and Ferns, and Ossory. The archbishop of Cashel unites in his own person the see of Emly, and has under him the bishops of Waterford and Lismore, Limerick and Ardfert, Killaloe and Kilfenora, Cork and Ross, and Cloyne. Under the archbishop of Tuam are the sees of Clonfert and Killmacduagh, Killalla and Achonry, and Elphin *.

In Ireland the members of the established church are far from being the most numerous class of the inhabitants. The Roman Catholics were supposed by Sir W. Petty, in the reign of Charles II., to be as eleven to two. Since that time the number of Protestants has considerably increased, especially in Ulster; and the Roman Catholics have, by many writers, been estimated at only about two-thirds of the whole population. In a late work, however, Mr. Newenham has given some reasons for supposing they amount to four-fifths of the whole †. The penal laws established in the reigns of Queen Anne and George I. against this body were very intolerant; but it has been the wise and liberal policy of the present reign to remove such grounds of complaint, and the Roman Catholics enjoy the fullest toleration in their religious worship, being under no restrictions, except exclusion from parliament, and from the higher offices of the state. The hierarchy of this body is nearly similar to the Protestant hierarchy; but the metropolitans and bishops are considered by the Protestants as merely titular. They have been appointed hitherto by the Pope, generally on the recommendation of the leading men at home; but it is probable, from late circumstances, that some change will take place in this respect. The metropolitans are stiled most reverend, and the bishops right reverend, and they are usually treated with respect both at court and by all classes of their fellow-subjects. The Catholic clergy were in former times educated abroad, and a considerable difference might be observed in their manners and information according to the foreign colleges at which they had resided. At present the liberality of government has provided them with all requisite advantages at home. They are chiefly taken from the middle class of society, and are indefatigable in their exertions as clergymen. Their influence over the members of their church is however thought to be on the decline. Their salaries are in general very small; and these obtained with great difficulty, but their wants are comparatively few from the state of celibacy in which they live; and it is to their honour that they are very attentive to the distresses of their poor parishioners. Besides the parochial clergy, there are several Friars of different orders in the large towns, who are supported by voluntary contributions. The nunneries not only receive such ladies as chuse to spend their lives in them, but also serve for the education of young females of the Roman Catholic persuasion.

Of the protestant dissenters the presbyterians are far the most numerous; and though dissenters, they partake in some degree of the nature and privileges of an establishment. They are chiefly descended from the Scotish presbyterians, and English puritans whom James I. encouraged to settle in Ulster. At first their ministers were inducted into the churches and had the tithes, and, notwithstanding some interruption from Lord Strafford, they retained these till Cromwell, irritated by their attachment

* Beaufort Mem. 105, 106. The bishop of Meath has precedence of all other bishops, and next to him is the bishop of Kildare. Young estimates the primacy at 8000l. a year; Derry at 7000; the other bishoprics from 4000 to 2000, but great changes have taken place since he wrote. Young, vol. ii. 189.

† Newenham's Inquiry into the Population of Ireland, p. 297, &c.

to

to the King, and their refusal to comply with his orders, deprived them of the tithes, and gave them small salaries instead of them. After the restoration, Charles II., in consideration of their sufferings and of their loyalty, granted them a salary of 600*l.* a year to be divided amongst them. In the reigns of William III. and George I. the royal bounty was augmented, and it has been repeatedly increased in the present reign. The ministers are now divided into three classes, of which the first receive from government 100*l.*, the second 75*l.*, and the third 50*l.* a year each, in addition to the salaries given by their respective congregations. No minister can, however, receive the above sum, unless regularly admitted into a presbytery, and approved by the lord lieutenant. The presbyterian form of church government is in some degree retained, and the ministers of nearly all the presbyteries meet together annually in the synod of Ulster, in which all the general concerns of the body are discussed. The number of the presbyterians is estimated at half a million by those who are best acquainted with the part of the kingdom where they chiefly reside. Since the repeal of the test act, they are free from all those restrictions to which the dissenters in England are subject, and have no object to pursue distinct from the general welfare of the community. The quakers are a numerous and respectable body, but are generally deserted by those who become wealthy, from an unwillingness to comply with their strict regulations. The other classes of protestant dissenters are few in number, unless we include the methodists. These consider themselves as members of the established church, and their clergy do not attempt to administer baptism or the Lord's supper. They have, however, separate places of worship, and they appear to increase rapidly in all parts of Ireland.

As the principal causes of discontent have been removed, and as all these sects possess in common, many valuable privileges, it is their interest, as well as duty, to live in harmony with each other; and to promote this harmony will be the endeavour of every man who sincerely desires the prosperity of the united kingdom. That this opinion gains ground more and more, affords a happy omen of future tranquillity.

GOVERNMENT.] The Government of Ireland was constructed upon the plan of that of England, being vested in a house of commons, and another of peers, while the King was represented by a lord lieutenant or viceroy. But no act of importance was considered as valid, till it received the sanction of the King and council of Great Britain. This continued till the year 1782, when the independence of Ireland was acknowledged, and the interference of the English council no longer allowed. At present, in consequence of the union, the form of government is identically the same in both countries. Ireland is represented in the imperial parliament by twenty-eight temporal and four spiritual peers, the former of whom are elected for life; and by a hundred commoners, who are chosen by the counties and principal towns. A vice-regal court is still maintained in Dublin, and there is a separate board of treasury for Ireland, as well as boards for the collection and management of different branches of the revenue. There is also a privy council to assist the lord lieutenant, the members of which have the same privileges as in England. The judges and courts of law have the same names; but there are some minute variations between the statute and common law of Ireland and those of England. Besides the assizes, which are held twice a year, there is in every county of Ireland, except that of Dublin, an inferior judge called an assistant barrister, whose business it is to sit, at least twice every year, in the most convenient parts of the county, to try civil bills, for the more speedy administration of justice.

POPULATION.] The population of Ireland has been variously stated. Many contend that it does not exceed three millions, whilst others state it to be above five millions. As the number of houses, according to the official return in 1791, was above 700,000, allowing six inhabitants to each house, it would exceed four millions, which is probably much below the real number. When it is considered that in 1695, the

population

population was little more than a million, this increase appears prodigious, and almost incredible. It may, however, be easily accounted for from the progressive improvement in agriculture and manufactures, from the mildness of the climate, from the abundance and convenience of fuel, and from the habits of the people, who, content with simple food, are plentifully supplied with a wholesome and cheap sustenance in that invaluable root the potatoe, and who are not deterred from early marriages by the fear of want. The abolition of the penal laws has also increased the population, by keeping at home the vast numbers who formerly engaged in the service of the continental powers*. Numerous emigrations have taken place from Ireland to America, and the various British settlements; but no separate colony of Irish has been founded.

ARMY.] Besides large contributions to the British army, Ireland in 1780 raised upwards of 40,000 volunteers, and has recently equipped a considerable militia and yeomanry. If we suppose every eighth person capable of arms, Ireland might raise a force of about 500,000 men.

NAVY.] Of mariners, Ireland contributes a respectable proportion, and many naval officers from this part of the united kingdom have distinguished themselves by their skill and courage.

REVENUES.] The public revenues of Ireland were computed by an intelligent traveller[2] at about one million sterling: or 6s. 8d. a head, when those of England stood at 1l. 9s. This was in the year 1778, and great changes have since taken place. In 1784, the national expenditure, according to Lord Sheffield, was 1,098,184*l.* and the whole debt funded and unfunded 2,179,208*l.*† In the year ending 5th January 1805, according to an account laid before the House of Commons, the sum raised for Ireland exceeded ten millions, of which 4,729,406*l.* was the net produce of the ordinary revenue, and the rest was procured by a loan. The national debt of Ireland was at that time 53,296,356*l.* 15*s.* By the terms of the union, Ireland pays $\frac{2}{17}$ of the general expences of the empire, and this sum in the same year amounted to 5,081,474*l.*‡ As a great proportion of the inhabitants of Ireland are unable to pay assessed taxes, and as numbers of those having large estates reside entirely in England, it can no longer be said, that the taxes are not materially felt.

POLITICAL IMPORTANCE AND RELATIONS.] With regard to the political importance and relations of Ireland, they would undoubtedly be great; but their weight has fortunately never been felt apart from those of England. The confused system of the old native government almost prevented Ireland from being considered in the scale of European states; and since the introduction of a more civilized scheme, she has been indissolubly attached to England. Montesquieu has justly regarded it as a radical error in the politics of Louis XIV. that when he sent troops to Ireland to restore James II., he did not seize the opportunity of establishing a firm conquest of the island, which would eventually have proved of more solid advantage to France than all their idle plans of ambition, if they had even been realized. The great mass of the people of Ireland being Catholics, one of the strictest bonds which can unite nations was already formed; and the numerous ports of Ireland might, under the conduct and ingenuity of the French, have sent forth numerous fleets, and have assisted their ally to balance the naval power of England. But happily for Great Britain that oppor-

* Beaufort's Mem. p. 142. Bushe in Transactions Irish Acad. vol. iii. Newenham's Inquiry into the Population of Ireland passim. The last writer enters much into detail, and produces many important documents.

[2] Young's Tour in Ireland.

† Sheffield on the State of Ireland. p. 343, &c.

‡ Official returns to the House of Commons in May and June 1805.

tunity was for ever lost. After the great preponderancy which the British have now held at sea, for more than a century, it is inconceivable that Ireland, an adjacent island, could have remained a separate state, without the special and previous consent of England. Her commerce would have been totally at the command of her rival, and any rising fleet of war would have been crushed in the very bud. If the English armies could have been withstood, still Ireland must have been restricted to her native produce, and the most innocent foreign luxuries must have been totally interdicted; nor to a candid and impartial observer would it appear that Ireland could attain any solid advantages by this *impossible* independence. Suppose an alliance formed with France, it must, at least for a long time, have continued an alliance of dependence; and to those who consult the real business of states, and not learned theories, which are very foreign from business, it must occur that this pretended alliance must soon have terminated either in the subjugation of Ireland by France, or a return to the connection with England, which would have been facilitated by an English party which would naturally exist in great force, and be continually increased by those who were malcontent at the French interpositions and usurpations. The political importance and relations of Ireland are therefore intimately blended with those of England; while the western position of the former imparts singular advantages in the commerce with America and the West Indies.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] SPENSER the poet, in his view of the state of Ireland, has preserved several curious particulars concerning the national manners in the reign of Elizabeth. As that work, though sanctioned by an illustrious name, is little read, two specimens shall be transcribed; one concerning what were then termed the Irish horse-boys, and the other giving some account of the bards. After describing the savage manners of the Gallowglasses or infantry, and the Kernes or predatory cavalry, that venerable writer thus proceeds:—

"And now next after the Irish kerns, methinks the Irish horse boys would come well in order; the use of which though necessity (as times now be) do enforce, yet in the thorough reformation of that realm they should be cut off. For the cause why they are now to be permitted, is want of convenient inns for lodging of travellers on horseback, and of ostlers to tend their horses by the way. But when things shall be reduced to a better pass, this needeth specially to be reformed. For out of the frie of these rake-hell horse-boys, growing up in knavery and villainy, are their kern continually supplied and maintained. For having been once brought up an idle horse-boy, he will never after fall to labour, but is only made fit for the halter. And these also (the which is one foul oversight) are for the most part bred up amongst the Englishmen; of whom learning to shoot in a piece, and being made acquainted with all the trades of the English, they are afterwards, when they become kern, made more fit to cut their throats. Next to this there is another much like, but much more lewd and dishonest, and that is of their Carrows, which is a kind of people that wander up and down to gentlemen's houses, living only upon cards and dice; the which, though they have little or nothing of their own, yet will they play for much money; which if they win, they waste most lightly; and if they lose, they pay as slenderly, but make recompence with one stealth or another: whose only hurt is not that they themselves are idle lossels, but that through gaming they draw others to like lewdness and idleness. And to these may be added another sort of like loose fellows, which do pass up and down amongst gentlemen, by the name of jesters, but are (indeed) notable rogues and partakers, not only of many stealths, by setting forth other men's goods to be stolen, but also privy to many traitorous practices, and common carriers of news."

After delineating the dissolute life of an Irish chieftain, Spenser thus introduces the Bards:

"In which if he shall find any to praise him, and to give him encouragement, as those Bardes and Rithmers do, for little reward or a share of a stolen cow; then waxeth he most insolent, and half mad with the love of himself, and his own lewd deeds. And as for words to set forth such lewdness it is not hard for them to give a goodly

and painted shew thereunto, borrowed even from the praises which are proper to virtue itself. As of a most notorious thief and wicked outlaw, which had lived all his life time of spoils and robberies, one of their Bardes in his praise will say, that he was none of the idle milk-sops that was brought up by the fire side, but that most of his days he spent in arms and valiant enterprises; that he did never eat his meat before he had won it with his sword; that he lay not all night slugging in a cabbin under his mantle, but used commonly to keep others waking, to defend their lives, and did light his candle at the flames of their houses to lead him in the darkness; that the day was his night, and the night his day; that he loved not to be long wooing of wenches to yield to him, but where he came he took per force the spoil of other men's love, and left but lamentation to their lovers; that his music was not the harps, nor lays of love, but the cries of people, and clashing of armour; and finally that he died not bewailed of many, but made many wail when he died that dearly bought his death."

Spenser, an excellent judge, then observes that he had caused several compositions of the bards to be translated, "and surely they savoured of sweet wit, and good invention, but skilled not of the goodly ornament of poetry; yet were they sprinkled with some pretty flowers of their natural device, which gave good grace and comeliness unto them; the which it is great pity to see so abused to the graceing of wickedness and vice, which with good usage would serve to adorn and beautify virtue."

The manners of the superior classes of people in Ireland now nearly approach to the English standard, except that excess in wine, unfashionable in England, continues to prevail too much in the sister island. The Irish gentry are also seldom addicted to literature or the arts; but amuse themselves with hunting and other robust exercises. Hence an overflow of health and spirits; and the observation of an able writer, that Ireland produces the stoutest men, and the finest women in Europe, must not be confined to the inferior classes.

The manners of the middle class are however very different from those of the English, and they have been well described by Dr. Crumpe in his *Essay on the best means of providing employment for the people.* "This class," says he, "is principally composed of men of small estates, who generally live beyond their income; and those landholders, known by the name of *middle men*, who take large districts of the country from those possessed of extensive estates, and either cover them with black cattle and sheep, or re-let them at extravagant rents to wretched and indigent cottagers. The general characteristics of this class are dissipation, idleness, and vanity. Every man, with a few acres of land, and a moderate revenue, is dignified, as a matter of course, with the title of Esquire; and be his family ever so numerous, the encumbrances on his little property ever so considerable, he must support a pack of hounds, entertain with claret, or if not able, with whiskey, keep a post-chaise and livery servants, and ape, in short, his superiors in every respect *. Meanwhile his debts are increasing, his creditors growing clamorous, and every industrious occupation which might relieve his distresses neglected, as utterly beneath the dignity of a Gentleman. To the same source are we to trace those nuisances to every rank of society denominated *bucks*, and *buckeens*. Such in general are either the eldest sons of gentlemen of small property, or the younger children of those of larger, who have received their scanty pittance, of which the augmentation by industrious means is never once attempted, and the final dissipation, one would imagine, deemed impossible. To stand behind a counter, superintend a farm, or calculate in a compting-house, would be beneath the dignity of such exalted beings,

* Since this was written in 1793, the taxes on carriages, male servants, and dogs, the increased price of foreign wines, and the encouragement given to agriculture have all contributed to lessen the evil here described.

" and disgrace the memory of their gentlemen ancestors. To the same general aver-
" sion to industry, and tendency to dissipation, and to a considerable share of family
" vanity, are we to ascribe the silly, but more excusable propensity of gentlemen to
" educate their children in gentlemanly professions. Hence arise the daily increasing
" number of curates with scanty salaries, or none, attornies preying on the public,
" ensigns without the means of rising higher, physicians without patients, and lawyers
" without briefs *." With respect to the mercantile and trading part of the community, they do not possess the spirit of industry and application to business, in as great a degree as those of the same description do in England; and they are much too apt to retire from business when their capitals begin to be such as to enable them to carry it on advantageously. These do not possess the unthinking spirit of extravagance which ruins the Irish gentlemen, yet they too frequently live up to, or beyond their profits, and bankruptcy is oftener the effect of this mode of living than of hazardous speculations. " Two leading and naturally allied features in the character of the
" lower Irish are idleness and inquisitiveness, especially when hired and employed to
" perform the work of others. The moment an overseer quits them, they inevitably
" drop their work, take snuff, and fall into chat as to the news of the day; no tra-
" veller can pass them without diverting their attention from the business in hand, and
" giving rise to numerous surmises as to his person, errand, and destination. The
" most trivial occurrence, especially in the sporting line, will hurry them, unless re-
" strained, from their occupations. A tendency to pilfering and theft is very predo-
" minant among them, and connected with this is the prevalence of low cunning and
" lying; and, as their accompaniment, may be mentioned a fawning flattery. The
" blunt honesty, the bold independence of the English yeomen are wanting; and in
" their place, too generally substituted the petty dishonesty of the vassal, the servility
" and artifice of the slave. Drunkenness is an evil of considerable magnitude in the
" catalogue of national vices. It is one to which the lower Irish are peculiarly ad-
" dicted, and that from which the most serious obstructions arise to their industry and
" employment. That vile beverage, *whiskey*, so cheaply purchased, and so generally
" diffused, affords them an easy opportunity of gratifying this destructive passion.
" As one consequence of the general prevalence of ebriety, the lower Irish are re-
" markably riotous. Their fairs are frequently the scenes of confusion, disturbance,
" and blood-shed. Combinations, risings, and outrage among tradesmen are far from
" unusual, and on pretexts that are truly ridiculous †. They are also, to a remark-
" able degree, lawlessly inclined. Instead of being anxious to apprehend offenders,
" or to assist the execution of the law, they are, in general, ready to give the former
" every assistance to escape; and to resist the latter, unless awed by superior force [2]."
The motive for thus mentioning the defects of the national character of the Irish, is to excite attention to the mode of remedying them. Sir John Davies and Mr. Young, both intelligent Englishmen, who had means of investigating the subject, have traced them to oppression. This originated with the native chieftains, and was continued by the English colonists; and to it many of the leading traits in the preceding character may easily be traced. " Extortion and oppression," as Sir John Davies says, " have been the true cause of the idleness of this Irish nation." Oppression is universally the parent of idleness, especially when accompanied by exaction and rapacity; both have existed to an enormous degree in Ireland, and both, though considerably diminished,

* Crumpe's Essay, 179—183.

† Many valuable branches of trade have been completely destroyed, or at least considerably injured by the combinations of the tradesmen, to raise their wages whenever there is a demand for their services; and neither the rigour of the law, nor the sufferings they have brought upon themselves, have yet removed this evil.

[2] Crumpe.

still

still exist [3]. Whoever will take the trouble of tracing the bad qualities enumerated to their source, and considering the favourable changes of which they are susceptible, will not hesitate to admit that the Irish are capable of being rendered as useful citizens, and as valuable subjects as any upon earth. This is to be effected by patient culture, by a prudent conjunction of coercion and conciliation, by an uniformly impartial administration of distributive justice, by introducing an improved system of education, by promoting habits of industry, and by involving their interests in the interests of the empire [4]. To counterbalance the defects that have been stated, there are innumerable good qualities; though these partake more of the energy of courage, the warmth of patriotism, and generosity of hospitality than the cool, considerate, and prudent perseverance of industry [5]. "Every unprejudiced traveller," says Mr. Young, "who "visits Ireland will be as much pleased with the cheerfulness as obliged by the hospi- "tality of the inhabitants, and will find them a brave, polite, liberal, learned, and "ingenious people." The courage of the Irish has, indeed, been ever esteemed by foreign nations who knew how to take advantage of the bad policy of the English government. Whole regiments were formed under the name of Irish brigades, and the siege of Cremona was not the only event in which Irish bravery was conspicuous. Instead, however, of strengthening our enemies, the Irish now serve in the British fleets and armies, and have had their share in the glorious victories which have sustained the dignity and independence of the empire.

In passing through Ireland a stranger will be struck by the crowds that attend funerals, and by the cries of the mourners, though these are less frequent than they used to be. The diet of the peasantry consists chiefly of potatoes and milk, which is found to be very wholesome and nourishing; and their habitations, especially in the south, are often only wretched hovels of mud. Fine healthy children run out in a state of nature to gaze upon the passing stranger, and the dress of the parents is contrived for warmth, not for ornament. The men in particular are remarkable for a large outside coat, hung on their shoulders, which they retain, except when at work, in the most sultry weather. In former times, a striking feature of national dress was a puckered shirt, consisting of 40 or 50 yards of linen dyed with saffron, which was regarded as an effectual antidote against vermin, but this custom is now only known from the researches of the antiquary. The amusements of the upper classes are similar to those of the same rank in England; but those of the common people have many shades of discrimination, for instance, the wake that precedes a funeral is a grand source of joy and amusement *.

Language.] The English language daily gains ground in Ireland, and might, if proper attention had been bestowed on the national education, have become ere now the general idiom of the country. The ancient Irish is, as is well known, a dialect of the Celtic intermingled with many Gothic words, imported by the Belgic colonies, by the Scandinavians, and by the English. Ireland being the last retreat of the Celts, and of considerable population, the language may be supposed to present the most numerous and genuine specimens of the Celtic denomination. The ancient lives of the saints have preserved many Irish terms, as remote as the sixth and following centuries; and fragments of pious translation descend even to the tenth century. The most venerable remains are the annals of Tighernac, and other writers, of the eleventh and

[3] Crumpe's Essay, 207, &c.

[4] Newenham on Population.—A lively description of the manners of the country squires and lower classes of Ireland will be found in a late novel entitled "Castle Rackrent;" but the characters described are becoming every day less common, and are, perhaps, from the nature of the work, exaggerated.

[5] Crumpe, p. 189.

* Mr. Young, ii. 229, observes that the Spaniards had a kind of settlement on the coast of Kerry; nor were they expelled till Cromwell's time. The Scotch in the north are still a very distinct race.

succeeding

succeeding centuries; and it is unaccountable that these valuable records have not been laid before the public in their original tongue, accompanied with a Latin or English interpretation. The calligraphy of the Irish manuscripts is so similar in every age, that it becomes extremely difficult, even for the antiquary, to discriminate the precise century in which any one was written; but there do not seem to be sufficient grounds to ascribe any now extant to a more remote period than the twelfth or thirteenth century.

The Lord's prayer in the Irish idiom runs in the following terms:

Ar nathair ata ar Neamh. Naomhthar Hainm. Tigeadh do Rioghachd. Deuntar do Thoil ar an Ttalámb mar do nithear ar Neamh. Ar naran laeatheamhail tabhair dhuinn a niu. Agus maith dhúinn ar Bhfiacha mar mhaitmidne dar bhféitheamhnuibh fein. Agus na léig sinn a cathughadh. Achd sáor sinn o Olc. Amen.

LITERARURE.] The literature of Ireland has a venerable claim to antiquity; for, as has been already mentioned, in the centuries immediately following the introduction of Christianity many writers arose, whose works were not indeed adapted to the popular taste, as they consist of lives of saints, and works of piety and discipline, but to the inquisitive reader they present many singular features of the history of the human mind. Those of the first description are commonly remarkable for a superabundance of miracles, which are but frugally distributed in the other European lives of saints. But the national manners, and the peculiar character of the times, are justly delineated, as in the fragments of a broken mirror. The chief glory of the ancient Irish literature arises from the repulsion of the rays of science, after it had almost perished in Europe, on the fall of the Roman Empire in the west. The Anglo Saxons, in particular, derived their first illumination from Ireland; and in Scotland literature continued to be the special province of the Irish clergy, till the thirteenth century.

A most ingenious and respectable writer of the last century[6] has published a small volume, containing a chronological catalogue of Irish authors, from about the year 450, to his own time, containing about two hundred names; the tenth century, as usual in European literature, being the most barren, whence it is styled by literary men the dark century. The illustrious names of Usher and Ware have been followed by a long train of eminent successors[7]; learning has ripened into genius, and all Europe acknowledges the superior talents of a Burke and of a Sheridan. The late lamented Earl of Charlemont set a distinguished example of the union of rank and literary fame, which it is hoped will be followed by other dignified persons, to the exclusion of low or boisterous relaxation. In some departments of science Ireland begins to resume her ancient prerogative of reflecting light to Britain; and the name of Kirwan stands almost alone in mineralogy, a branch highly important to the prosperity of nations, but unaccountably neglected in the land of tin.

EDUCATION.] In no quarter of the British dominions has education been conducted upon a more solid and rational plan than in Scotland: and no where has it been, till of late, more neglected than in Ireland. It is to be hoped that one consequence, and not the least important, of the Union, will be the introduction of parochial education into Ireland, a sure mean of preventing the ebullitions of ignorant discontent, arising often from erroneous views of human life and happiness, and from the weakness of uninformed fanaticism. Those who may justly distruſt theory in any political question, may here find the evidence of facts; and may compare the turbulence of the Irish with the peaceable demeanour of Scotish Highlanders, a congenerous people. But though a system of education is wanting in Ireland which shall extend to all the

[6] Sir J. Ware Script. Hibern.

[7] Amongſt these we find the names of Swift, Parnell, Congreve, Sterne, Goldsmith, King, and Berkeley.

poor, and though the schools now existing have many defects, which require correction, yet it is not to be supposed that there are few or no schools for the poor in Ireland. On the contrary, the charter schools, Erasmus Smith's schools, the foundling hospitals at Dublin and Cork, and others, receive about 7000 children, who are clothed, fed, and instructed in the Protestant religion. There are many other Protestant schools in which the children are merely educated, and in some of them great attention is paid to form habits of industry. Besides these, schools have been instituted in which Protestant and Roman Catholic children mix together without any attempt to influence their religious faith. The Roman Catholics also have charity schools at which numbers of poor children are instructed; and such is the desire of information, that there is not a village, especially through the south, where there is not a schoolmaster, who, in a small cabin, or under a hedge by the road side, teaches the children of it, the parents gladly paying him out of their little earnings. The progress that many of these poor scholars often make in Arithmetic and Geometry, is such as seems scarcely credible to those who have not witnessed it; and mathematical works of high price are esteemed and purchased by those who live on potatoes and milk, and are clothed in rags. The attention of many eminent characters has been directed to the improvement of education, and if more progress has not been made it has been in consequence of the difficulty arising from the different sects of which the population is composed.

Universities.] With four Archbishoprics Ireland only possesses one Protestant university, that of Dublin[8]. This institution was first projected by Archbishop Leech, about the year 1311; but death having interrupted his design, it was revived and executed by Bicknor his successor, and enjoyed moderate prosperity for about forty years, when the revenues failed. In the reign of Elizabeth the university was refounded by voluntary contribution, under the auspices of Sydney the Lord Deputy. In 1591 it was removed from the precincts of St. Patrick's church to the site of an Augustine monastery; and received a charter from Elizabeth under the style of Trinity college. The first James and Charles were liberal benefactors. It consists of a chancellor, vice-chancellor, provost, vice-provost, twenty-two fellows, and thirteen professors of various sciences. The number of students is commonly about six hundred, including seventy scholars on the foundation, and thirty servitors or sizers. To make advancement the reward of exertion is the prevailing principle in this university. Admission into it is only allowed to those who on examination appear to have improved themselves at school. Scholarships are given to the best classical scholars who have arrived at their third year, and entitle the possessors to a small annual income, and to a place in the corporate body. The more lucrative, and honourable situation of a fellow is only obtained by many years of hard labour, and by being superior to other candidates on a long and very difficult examination. Quarterly examinations are also held for the undergraduates, and premiums given to the most distinguished answerers, the good effects of which are visible in the exertions of the students. The building consists of three quadrangles; and it contains a library of great extent and value, which has been lately enriched by the celebrated Fagel collection from Holland. There are also a hall for examinations, a chapel, a printing-office, and convenient theatres for the different lectures. Adjacent is a park; and an observatory has been lately erected on the calcareous rock of Dunsink, about four miles to the north-west *.

In the year 1795, the Parliament of Ireland, justly sensible of the evil arising from the Roman Catholics being obliged to resort for education to foreign countries,

[8] Gough's Camden, iii. 555.

* See an account of this observatory in the Transactions of the Royal Irish Academy, vol. i. p. 23.

established

established the Royal college of St. Patrick at Maynooth, a small town about 12 miles from Dublin, under the occasional superintendence of a respectable board of trustees, and governed by a president. There are seven resident professors, and a provision for the education of young men for the Romish church. The Roman Catholics have also a lay college at Maynooth established by private subscriptions in 1802, and a college for the education of Priests at Carlow.

There are many endowed schools in Ireland, of which that at Kilkenny is one of the best. The incomes of the masters are in some instances, however, so great, from the increased value of lands, as to defeat the intended benefit. The education of the higher and middle ranks is as much attended to as in England, and schools of all descriptions are rapidly improving.

Dublin Society.] The Dublin Society for the improvement of agriculture and manufactures was instituted by the efforts of the patriotic Dr. Samuel Madden, in 1731, being the earliest of the kind now existing in Europe[9]. The object of this society is to connect science and art, and to direct their united efforts to the improvement of agriculture, manufactures, and commerce, and to the increase of domestic comforts. Public lectures on chemistry, on botany, on natural philosophy, and on the veterinary art have been instituted; models of implements of agriculture and of improved machinery for manufactures have been procured; schools of architecture, landscape, ornament and figure-drawing have been established; and annual premiums are given to reward ingenuity and encourage attention to the objects of the society. A botanic garden has been made at Glasnevin, near Dublin, including above 27 English acres, which is laid out in a peculiarly instructive manner. The Leskean collection of minerals has also been purchased by the society. This was formed by Leske, one of the earliest and most distinguished pupils of the celebrated Werner. It was afterwards revised, enlarged, and described by Karsten, and has since been even more rigorously examined by Kirwan. The whole collection contains 7331 specimens, and is one of the most perfect monuments of mineralogical ability now extant. It is placed in a large room fitted for the reception of students, and in adjoining apartments are the minerals of Ireland, and such others as the society is continually adding to the collection*."

Cities.—Dublin.] Dublin, the capital city of Ireland, seems to be the Eblana of Ptolemy; but continued little known till the tenth century, when it was mentioned in the Saxon chronicle; and in the beginning of the next century, we have coins of Canute struck at Dublin. The situation is delightful, in a bottom, between ranges of hills on the south and north. It is pervaded by the river Liffy, and by some rivulets. The inhabitants have been estimated at 170,000; this capital being justly accounted the second in the British dominions, and the fifth in the scale of European cities[10].

The circumference of Dublin may be about ten miles, being about two miles and a quarter in length, and as much in breadth. The harbour is incommodious, being impeded with two banks of sand, called the north and south bulls, which prevent ships of large burden from passing the bar; but some improvements have been made, and others might be carried into execution. A mole has been constructed four miles in length; and the quays are spacious and beautiful. There are six bridges, the chief of which is that called Carlisle. The houses were anciently constructed of wattles daubed with clay. In Elizabeth's time they used timber in the Flemish fashion; and brick and stone were seldom introduced till the last century. The castle was founded

[9] Young, ii. 210.
* Transactions of Dublin Society.
[10] Gough's Camden, iii. 534. 558. Whitelaw on Population of Dublin.

about the year 1205, but has been since re-built, and is now the town residence of of the Viceroy, and the sanctuary of the public records. The Parliament House, a superb building, erected at considerable expense, has been purchased for a national bank. The church of St. Patrick is the cathedral, a venerable building, which was begun in the end of the twelfth century; but the steeple, the highest in the city, was not erected till the year 1370. The other churches are twenty in number, several of which are elegant modern erections. The Royal Exchange was completed in 1779; and among other beautiful edifices must not be omitted that whirlpool of expenditure, the Custom House; the new Four Courts, and the houses of the Duke of Leinster, the Earl of Charlemont, and others.

Dublin has an ample supply of native provisions; but coals are imported from Scotland and Cumberland.

The environs of Dublin present many pleasant views, and remarkable objects. St. Stephen's Green is an English mile in circumference, laid out in walks, and planted with trees, in 1670, with an equestrian statue of George II., by Van Nost, in the centre. The Phœnix-park is the Hyde-park of Dublin, and contains the country residence of the Viceroy. Many seats of the nobility and gentry decorate the vicinity of Dublin. The hill of Howth is a peninsular promontory, which forms the north-east side of the bay of Dublin; and about three quarters of a mile to the north is Ireland's eye, a small rocky isle. Lambay is a larger island near the shore, full of rabbits, and sanctified by a holy well. Dalkey is a romantic village at the northern base of a mountain, six miles and a half from Dublin: but amongst the most pleasant places in the vicinity, are Lucan, where there is a sulphureous spring, much visited in the summer season; and Leixlip, a noted salmon-leap, so called from these fish darting up the cataract. Swords, six miles to the north, presents a very complete round tower, seventy-three feet in height; and about a mile beyond Kilternen, is a remarkable chasm, called the Scalp, in the ridge of a mountain, appearing as if that part had been undermined, and had fallen in.

Cork.] In proceeding to give a brief account of the principal towns and cities of Ireland, Cork and Limerick attract the first attention. Cork is a city of considerable importance, situated on the south-east side of the island, and supposed to contain about 80,000 inhabitants. The haven ranks among the most capacious and safe in Europe; and the passage from it to the city is remarkable for the variety, and beauty of the scenery. The exportation, the largest in the sister island, consists chiefly of beef, pork, hides, tallow, and butter. It is the grand market of Irish provisions; and it was computed that no less than an hundred thousand cattle were here annually killed and salted, between the months of August and January[11]. The provision trade is however on the decline; and the export of corn has become considerable. The breweries and distilleries of Cork are numerous and extensive. One porter brewery alone delivers about 100,000 tierces annually, and the liquor is held in such high estimation that it is preferred to any other, in the West Indies. This city lies chiefly in a marshy island, surrounded by the river Lee; but the marshes on the opposite side of the river having been drained, ample space has been given to the recent improvements *.

Limerick.] Limerick unites the fortunate situation of being almost central to the south of Ireland, with an excellent haven, formed by the long estuary of the river Shannon. The city is accounted the third in Ireland, and was formerly fortified with great care. The episcopal see is said to have been founded in the year 652. The Danes held the city from the ninth century to the eleventh. There are three bridges

[11] Gough's Camden, iii. 504.

* Mr. Young, vol. i. 417, expresses his astonishment at the populousness of Cork. The duties of the harbour were, in 1751, 62,000*l.*; in 1779, 140,000*l.*

over

over the river, one of which consists of fourteen arches. The number of inhabitants has been computed at 50,000. This is a very improving city in every respect in consequence of the extensive communication it has by the Shannon, and the grand canal, with the interior parts of the country. It has an export of beef, pork, and butter; but its chief trade is in grain, of which larger quantities are sent from this, than from any other port of Ireland[12].

The other chief towns in Ireland shall be briefly mentioned, in a geographical progress from the south towards the north.

GALWAY.] Galway is a town of considerable note, and carries on an extensive trade with the West Indies. The port is commodious and safe, but distant from the city, which can only be reached by vessels of small burden: the number of inhabitants is computed at 12,000. Greater trade is now carried on in the bay of Sligo than at Galway[13].

WESTPORT.] On Klew bay, in the centre of the west of Ireland, stands Westport, which has been increasing under the auspices of the Marquis of Sligo; but by some fatality the advantages of the county of Mayo, have not been improved, nor are there any towns of much consequence upon the whole western coast.

SLIGO.] Sligo is, however, increasing in trade; and the inhabitants are computed at 8000: and Castlebar is also a prosperous town[14].

LONDONDERRY.] Londonderry is more remarkable for its ancient and military fame than for its present commerce, though not unimportant. It stands on the river Foyle, over which a wooden bridge of singular construction, one thousand and sixty-eight feet in length, was thrown in 1791.

BELFAST.] Belfast, on the north-east, is in the centre of the linen manufactures, and may almost be regarded as a Scotish colony. The inhabitants are computed at 20,000. The chief manufactures, cotton, cambric, sail-cloth, linen, with glass, sugar, and earthenware. It maintains considerable intercourse with the commercial city of Glasgow; and the grand exports are to the West Indies.

NEWRY.] Newry, on a small stream which flows into the bay of Carlingford, is the second of the northern towns. Its butter trade amounts to above 300,000l. annually; and the linens exported from it from January 1802 to 1803, amounted to 200,000l. The average of the weekly sales in the linen market is estimated at 4500l. A canal extends from Lough Neagh, by Newry, to the sea. Carlingford bay is remarkable for oysters.

DUNDALK.] Dundalk has also its manufactures of linen and muslin. Drogheda imports sea-coal and goods from England, and exports considerable quantities of grain. It is a well-built town on the Boyne; the inhabitants on enumeration in 1798 were found to exceed 15,000.

WEXFORD.] Towards the south-east, Wexford claims the first notice, being remarkable for its woollen manufactures; but the haven, though spacious, is not sufficiently deep for large vessels. The inhabitants are 9000.

NEW ROSS.] New Ross, situated on the river Barrow, exports a great deal of beef and butter, the river bringing up large ships to the quay, with many articles for the consumption of the surrounding country.

WATERFORD.] Waterford is a city of considerable importance, situated on the river Suir *, and is supposed to have been founded by the Danes. A noble quay extends the whole length of the town to which large vessels can come; and a fine wooden

[12] Gough's Camden, iii. 517. [13] Beauf. 9. [14] Beauf. 72. Young, i. 291.

* —— That gentle Swire, that making way
By sweet Clonmell, adorns rich Waterford.
SPENSER.

bridge has been lately thrown over the Suir. The population is about 35,000. The chief exports are beef, pork, grain, and linen. Packet-boats sail regularly betwixt Waterford and Milford Haven.

The sea-ports of Dungarvon and Yougall are lost in the superior consequence of Cork; but Kinsale is a maritime arsenal, and is supposed to contain 8000 souls.

KILKENNY.—CLONMELL.] Of the interior towns of Ireland the principal are Kilkenny, a handsome city with above 16,000 inhabitants; and Clonmell on the Suir, a populous and flourishing town. There are many others of respectable size; but Armagh, Cashel, Tuam, &c. are rather venerable from their ecclesiastic antiquity than important in themselves.

EDIFICES.] Many of the chief edifices of Ireland have been already mentioned in the description of Dublin. The cathedrals seldom aspire to great praise of architecture; and the villas of the nobility generally yield in splendour to those of England, and even of Scotland. Among the principal villas may be mentioned Castletown, not far from Dublin on the south, esteemed one of the most elegant houses in Ireland; Slane castle on the Boyne, the seat of Lord Conyngham; Mount Juliet on the river Nore, and Woodstock in the same vicinity; Mount Kennedy, the seat of the late Lord Rossmore; Shane's castle on Lough Neagh; Castle Caldwell on Lough Earn; and Belleisle, on the same lake; Florence Court, the seat of Lord Enniskillen; Westport, Marquis of Sligo's; Woodlawn in Galway, Lord Ashtown's; Castle Martyr, a seat of the Earl of Shannon; Rostellan, near Cork; Dundrum, the seat of Lord Hawarden; Curraghmoer, not far from Waterford; with many others too numerous to be here inserted *.

Though the turnpike roads in Ireland be rather neglected, yet the cross roads are admirable; and Mr. Young has explained at length the principles upon which they are conducted [15].

INLAND NAVIGATION.] The advantages derived by England from inland navigation soon attracted the attention of Ireland: and not many years after the example set by the Duke of Bridgewater, a grand canal was begun from the city of Dublin to the river Shannon, and was actually carried on to the bog of Allen, at the expence of 77,000*l.* [16] But the engineer's want of ability occasioned great errors in the original plan and survey; and the work was interrupted in 1770. It has since been completed to the Shannon near Banagher, and to the Barrow at Athy, so as to join Dublin by inland navigation with Limerick and Waterford. Another called the Royal canal is carrying on from Dublin to the Shannon, through the counties of Westmeath and Longford.

A canal is completed from the sea near Newry to Lough Neagh, and thence to the collieries of Drumglass and Dungannon; but the original intention of supplying Dublin with Irish coals has not succeeded.

The Parliament of Ireland also granted considerable sums for the canals of Lagan, Dromreagh, Blackwater, and for improving the navigation of the rivers Shannon, Barrow, and Lee [17]. Though in the first place, the avaricious and jobbing spirit of the persons employed; and latterly, the distracted state of the country have impeded these noble intentions; yet some of the objects have been completed, and works of this kind are now carried on with more exertion and public spirit.

MANUFACTURES AND COMMERCE.] Though we find, as has been already mentioned, that Ireland was distinguished at an early period for her manufacture of

* Mr. Young, ii. 349, observes that the buildings in Ireland have been almost wholly renewed since 1760, in cities, towns, and country-seats; and the improvements were proceeding with great rapidity till the late unfortunate commotions.

[15] Vol. ii. 151. [16] Phillips, 330. [17] Young.

woollen

woollen stuffs *, yet the spirit of industry made little progress, and the chief Irish manufactures are of recent institution. But the linen manufacture was not unknown in Ireland in more early times, as appears from acts of parliament in the reigns of Henry VIII. and Elizabeth. In that of William III. it became an object of consequence; and in 1699 such high duties were imposed upon Irish woollens, that the manufacture was nearly abandoned, and the efforts of industry directed to the linen trade. The annual produce of the linen manufacture was computed at about 2,000,000*l.* sterling, 1780 [18]. In the year ending January 1799 the value of Irish linen exported to Great Britain exceeded 2,500,000*l.* exclusive of that sent to America and consumed at home; and it has since considerably increased [19].

But a grand portion of the commerce of Ireland arises from her abundant stores of black cattle, the moisture of the climate rendering the pasturage remarkably luxuriant.

In 1780 Mr. Young computed the average imports of Ireland at 1,240,677; and the exports at 2,012,202*l.* Yet he afterwards calculates the exports at about three millions and a half; and the balance of trade in her favour at above 1,000,000 †. From the annual average taken of the three years preceding the 5th January 1799, it appeared that the total value of exports from Ireland to Great Britain alone was 5,612,689*l.*; whilst the value of imports from Great Britain was only 3,555,845*l.* leaving a balance in favour of Ireland of 2,056,844*l.* This balance is however turned against Ireland by upwards of two millions remitted to absentees; and by the interest of loans raised in England [20].

* See a dissertation by the Earl of Charlemont, T. R. A. vol. i.

[18] Young, ii. 283. 301. [19] Appendix to Lord Auckland's speech on the Union.

† Tour in Ireland, ii. 333. 352. Dr. Beaufort in his Memoir, p. 145, says that on an average of seven years, to 1791, Ireland exported to the amount of 4,357,000*l.*

[20] Appendix to Lord Auckland's speech.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons. — Face of the Country. — Soil and Agriculture. — Rivers. — Lakes. Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

CLIMATE AND SEASONS.] IRELAND lying nearly in the same parallel with England, the difference of climate cannot be supposed to be very important. The mean temperature of the North is about 48; of the middle 50; of the South 52 of Farenheit [1]. In the sixth volume of the transactions of the Roval Irish Academy may be seen a curious Memoir on the climate of Ireland, by the Rev. William Hamilton, in which the ingenious author attempts to account for a considerable change in the seasons, which has happened almost within the memory of the present generation, particularly the mildness of the winters, while the summers are less warm and genial. He supposes that the western winds are more violent, whence many kinds of trees cannot prosper, and even the ash threatens a speedy annihilation. He observes the progress which the sands have made, particularly at the entrance of the river Bannow, in the county of Wexford, where the town of Bannow, formerly so considerable as to send members to Parliament, has been overwhelmed; as has a gentleman's residence in the county of Donegal. The tides have also assumed more power and violence. From all these circumstances, Mr. Hamilton shews the superior power of the western gales, and the consequent production of a humid and ungenial climate. He supposes that the prevalence of the Western winds is chiefly owing to the eradication of forests in Europe, Asia, and America.

FACE OF THE COUNTRY.] In considering the face of the country it must be remembered that Ireland forms a striking contrast to Scotland, being mostly level, fertile, and abundant in pasturage. The chains of hills, for they can hardly aspire to the name of mountains, are few and unimportant.

SOIL AND AGRICULTURE.] The soil and agriculture of Ireland are topics which have been ably illustrated by an intelligent writer [2]. He observes that the quantity of the cultivated land exceeds in proportion that of England. The most striking feature is the rocky nature of the soil, stones generally appearing on the surface, yet without any injury to the fertility; whence the soil may be defined a stony clay, a stony loam, a gravelly sand, &c. The stones are generally calcareous, and appear at no great depth, even in the most flat and fertile parts, as Limerick, Tipperary, and Meath. The climate being more moist than that of England, the verdure never appears parched with heat *. Tillage is little understood, even in the best corn counties, as Lowth, Kildare, Carlow, and Kilkenny, turnips and clover being almost unknown: the wheat sown upon fallow, and followed by several crops of spring corn. The farmers are oppressed by the shocking system of *middle men*, who rent farms from the landlords,

[1] Trans. R. I. A. vol. ii. [2] Young's Tour, ii. 72.

* The Curragh of Kildare is a most beautiful lawn, of above 4000 English acres, a sheep-walk of the softest turf, and most delicious verdure. Young, ii. 7.

and

and let them to the real occupiers; who, as well as the proprietors, suffer greatly by this strange practice. Even under these abuses Ireland is a most fertile country; and since encouragement has been given to agriculture, has become a treasury of grain. Even the bogs, among which that of Allen extends eighty miles, and is computed to contain 300,000 acres, might generally be drained, and converted into fertile meadows. Lime-stone gravel is a manure peculiar to Ireland; having on uncultivated land the same wonderful effect as lime, and on all soils it is beneficial [3].

RIVERS.—SHANNON.] Among the chief rivers of Ireland must first be mentioned the Shannon, which rises from the lake of Allen, and passing through two other large lakes, Lough Ree, and Lough Derg, afterwards extends below Limerick into a vast estuary or firth, about sixty miles in length, and from three to ten in breadth [4]. This noble river is, almost through its whole course, so wide and deep as to afford easy navigation. Boate informs us that the celebrated Earl of Strafford designed to remove a rock, six miles above Limerick, which forming a cataract impedes the intercourse between the upper and lower parts. It has since been deemed preferable to connect the navigable parts of the river above and below the cataract by a canal. The whole course of the Shannon may be computed at 170 miles.

The other rivers of Ireland have little of this majestic character.

BARROW.] The river Barrow rises about 40 miles to the west of Dublin, near the source of the Boyne; and after a course of about 100 miles enters the sea on the South-east, having received the rivers Nore and Suir, and formed the harbour of Waterford. It has been rendered navigable to Athy, where the grand canal joins it.

BLACKWATER.] The Blackwater, another considerable stream in the South, enters the sea at Youghall Bay, being navigable from Cappoquin.

The Slaney forms the harbour of Wexford.

The Liffy is an inconsiderable stream, ennobled by the capital.

The Boyne, after a course of about 50 miles, also enters the eastern sea: the other rivers on the east are small and unimportant.

BANN.] In the north the Bann is a considerable stream, which pervades Lough Neagh, and enters the sea after a course of about 70 miles. By the canal of Newry it communicates with Carlingford bay; and thus insulates the north-east projection of Ireland.

FOYLE.] The river Foyle passes by Londonderry, and has a considerable estuary called Lough Foyle. The Swilley is of inconsiderable length, but forms a long estuary.

On the north-west Lough Erne issues into Donegal bay by a considerable stream; but no other river of consequence occurs till we reach the estuary of the Shannon; nor are the rivers on the south-west of much note.

LAKES.] The lakes of Ireland are numerous, and some of them extensive. The term *Lough*, corresponding with the Scotish *Loch*, is sometimes applied to an estuary, or to an inlet of the sea, such as the Swilley, the Foyle, that of Strangford in Down, &c. The chief lake of fresh water is that of Erne, which exceeds 30 British miles in length, and 12 in its greatest breadth; it is divided by a narrow outlet, from the southern part into the northern, of about four miles in length, on an island in which is situated the town of Enniskillen.

NEAGH.] Next in magnitude is Neagh, about 22 miles in length, and 12 in breadth. Lough Erne is studded with islands which form a number of rich and interesting prospects; but Lough Neagh is one vast sheet of water. The waters of the latter, or the

[3] Young, ii. 171. Since Mr Young wrote there has been great improvement in agriculture, and from the exertions of the Farming Societies more progress may be expected.

[4] Boate, p. 36.

adjoining soil possess a petrifying quality; but though the fact is well established, the process requires the investigation of some able naturalist [5].

CORRIB.] The lake of Corrib, in the county of Galway, is about 20 miles in length, and from two to five wide. Those of Ree and Derg are less considerable in size: and there is a smaller lake, also named Derg, in the north-west, which was remarkable in superstitious times for a little island containing what was called the purgatory of St. Patrick [6].

LAKE OF KILLARNEY.] Among the lakes of the second magnitude, must be first named the beautiful and interesting Lake of Killarney in the south-west, abounding with romantic views, and fringed with the arbutus, no where else a native of the British dominions. This is almost the only lake in the south of Ireland; and the observation may be extended to the east. On the north-west are the lakes of Eask, Trierty, Melvin, Macnean, and Gill. That of Allen, as already mentioned, is a chief source of the Shannon, into which the Gara and Key also pour their waters. Further to the west are two considerable lakes, the Conn and the Mask; nor must those of Corrafin be forgotten.

MOUNTAINS.] The mountainous chains in Ireland are neither numerous nor important; but an upland ridge divides the country from the north-east to the south-west, giving birth to several of the rivers. The Irish hills generally form short lines, or detached groups. One group of considerable height appears on the west and south of Lough Lane, or what is called the lake of Killarney: of these Mangerton is 2500 feet above the sea *. A small line of hills extends on the north-west of Bantry Bay, and passes to the east under the name of the Shehy mountains [7]. To the north of this is the line of Sliebh-logher and Nagles: followed by the Galtee mountains; and towards the east are those of Knockmele-down, which bend southward towards the bay of Dungarvon. A small chain also appears to the south of Tralee, in which the lofty Brandon is conspicuous above the rest; and this, with a group to the north-east, may be said to complete the enumeration of the mountains of Munster.

In Leinster is a mountain so called, the line of Sliebh-bloom on the south-west, and a considerable group to the south of Dublin, styled the Kippure mountains, or those of Wicklow. The extent of this group is about 30 English miles in length, by about 12 in breadth.

In Ulster is a small group, called the mountains of Mourne, in the south-east corner of the province: one of them, Donard, is said to be about the height of Mangerton. The hills of Sliebh-croobe (in the Irish language *sliebh* signifies a mountain,) form the centre of the county of Down; and several hills are sprinkled over the eastern half of Antrim. On the north-west of Lough Neagh are those of Sliebh-gallan, and Carntogher. Sliebh-snaght is a considerable mountain north-west of Lough Foyle, whence other lines and groups extend down to Lough Erne.

[5] Smyth in Boate, p. 121. Coote's Armagh, p. 102. Many specimens of petrified wood, found adjoining to or in Lough Neagh, may be seen in the collection of the Dublin Society, and in private collections.

[6] Ware, p. 219, ed. 1658.

* Mr. Young, i. 458, says Mangerton is 835 yards (2505 feet) above the level of the sea. A scientific gentleman in Ireland, who has paid attention to the subject, has communicated the following heights of the chief Irish mountains.

Sliebh Donard, Co. Down.	2803 feet.
Mangerton, Co. Kerry.	2511 feet above the sea.
	823 feet above the lake of Killarney

measured geomatrically by the late Col. Herbert.

M'Gillicuddy's reeks, by estimation 2800 feet, certainly higher than Mangerton.

Croagh Patrick, Co. Mayo.	2660 feet } these were measured barometrically by
Nephin, Co. Mayo.	2634 feet } Mr. Kirwan.

[7] Beaufort's Memoir of a map of Ireland.

The eastern part of Connaught presents numerous marshes; but few mountains, except those of Baughta on the south. The extreme western peninsula is one of the most mountainous regions in Ireland. Among other names may be mentioned mount Nephin in the county of Mayo, a solitary hill of 2640 feet, and one of the most considerable in the island. That of Croagh Patrick on the south-east of Clewbay, a cone of 2666 feet; the Fernamore mountains to the west of Lough Mask; and the Twelve Pins, a line of so many small peaks in Ballinahinch; with others to the south of Lough Corrib.

Forests.] Scarcely the semblance of a forest remains in Ireland; and Boate has long since observed, that the woods have been greatly diminished since the entrance of the English, partly from the extension of tillage, and partly from the necessity of opening up the recesses of banditti[8]. Another great cause was the consumption in domestic fuel, and in the iron manufactures, the coal mines not having been explored. Yet Boate informs us that considerable woods existed in his time in Wicklow, Wexford, and Carlow, Kerry, Tipperary, and Cork. The province of Ulster also boasted of extensive forests, in the counties of Donegal, Tyrone, Fermanagh, and Antrim. The western province of Connaught, being the most remote from the new colony, was in his time stored with trees; but the most noted forests were in the counties of Mayo and Sligo.

Moors or Bogs.] The place of the forests was unhappily usurped by the moors or bogs which form a remarkable feature of the country. Boate divides them into several genera and species, forming an elaborate scale of sterility. The dry heaths are chiefly confined to the mountains. The bogs he subdivides into four descriptions: 1. The grassy, in which the water being concealed by herbage, they become extremely perilous to travellers: some of these are dry in the summer. 2. The pools of water and mire. 3. What he terms hassocky bogs, or shallow lakes studded with tufts of rushes, which are chiefly found in the province of Leinster, especially in King's and and Queen's counties. 4. The peat moors. In the Transactions of the Royal Irish Academy[9], there is a curious account of the formation of a bog, by the motion of a peat moor after a heavy rain: the peat moor at the same time, by obstructing the course of a stream, formed a considerable lake, in the space of half a day. But this event was rather of a local nature; and the formation of bogs seems to be owing, in many instances, to the moisture retained in those parts of forests which chance to form hollow receptacles, the fall of the leaves forming a vegetable earth, supersaturated with moisture, so that the trees themselves in time fell a prey. Ornaments of gold and other relics of antiquity, have from time to time been discovered in the bogs at great depths; and there are other indications that they are of comparatively recent formation. It is hoped that the hand of industry will in time remove many of these blemishes; and one of the greatest improvements of modern agriculture is that of reclaiming peat moors, by means of calcareous manure. Mr. Young only divides the bogs into two sorts, the black and the red; the former being solid almost to the surface, and generally improveable, though at great expence. The red is so called from a reddish substance, five or six feet deep, which holds water like a sponge, yields no ashes in burning, and is supposed to be utterly irreclaimable. Trees are found in both, and they are supposed to originate from fallen forests. Both differ from the English morasses; the Irish being rarely level, but rising into hills; and there is a bog in Donegal, that is a perfect scenery of hill and dale. The plants are heath, with some bog myrtle, and a little sedgy grass[10]. These bogs furnish an abundant supply of good fuel; and though some have supposed them to be unwholesome, experience does not

[8] Boate, p. 67. [9] Vol. ii. p. 3. [10] Transactions of the Royal Irish Academy, vol. ii. 177.

warrant such a conclusion. The bog waters, far from emitting putrid exhalations like stagnant pools and marshes, are of an antiseptic and strongly astringent quality, as appears from their preserving for ages, and even adding to the durability of the timber, which is found universally buried beneath their surfaces; and from the converting to a sort of leather the skins of men and animals; who have had the misfortune of being lost, and remaining in them for any length of time *.

Botany.] The study of Botany has been less cultivated here than in any other part of the united Empire; and the neighbourhood of Dublin, which has been best explored, affords no rare, and few characteristic plants. From the general mildness of the climate, the extensive tracts of bog, and the mountainous ranges that intersect the country, and afford capacious basons for its numerous lakes, it is obvious that the Flora of Ireland, when complete, will probably contain several species that are strangers to the rest of the British islands. There will still however be such a resemblance between the two Floras as to render it unnecessary to consider them as distinct. The grasses esteemed most valuable by the farmer are natives, so that Ireland has ever been celebrated for the excellence of its pastures. Amongst the rare grasses are the Panicum sanguinale, Bromus racemosus, and Festuca calamaria. The Festuca vivipara and Phleum Alpinum are found on high mountains. The species of Eriophorum Carex, and other natives of bogs and pools, are very abundant. Amongst the leguminous plants are some beautiful varieties of Polygala vulgaris (Milkwort), Vicia Sylvatica (wood vetch), Orobus Sylvaticus (bitter vetch), Trifolium Arvense, Scabrum and Maritimum. Pimpinella dioica (rock parsley), and Corrigiola littoralis (sand strapwort) are amongst the umbelliferous tribe †. A new species of rose, called Rosa Hibernica, has been lately discovered by Mr. Templeman ‡, and the Euphorbia Hiberna (Irish Spurge) is esteemed different from the species so called by some English writers. Saxifraga umbrosa, (known in our gardens by the name of *London-pride*,) is very abundant in the neighbourhood of Killarney, in the county of Kerry, and on many western mountains; and Saxifraga palmata has been found on Galtymore in the county of Tipperary. The romantic scenery of Killarney is the most northern *habitat* of the Arbutus Unedo, which is now unequivocally ascertained to be indigenous there; the heaths abound with the stately Erica Daboeci, and the Dryas octopetala. Arbutus uva-ursi, with other Alpine plants already noticed in the Botany of Scotland, expand their neglected blossoms, and trail their glowing festoons of clustered berries, unnoticed amidst the wide solitude of their rocky fastnesses. Mr. Turner in his *Muscologiæ Hibernicæ Spicilegium* has shewn that Ireland abounds in this division of Cryptogamia. Buxbaumia aphylla found near Killarney by Dr. Wade; Grimmia maritima and Dicranum Scottianum first described by Dr. Scott, are mosses peculiar to Ireland. The Lichen tartareus, omphalodes, calicaris calcareus, and parellus, with others used in dying, are also commonly met with, and often employed by the peasants.

Zoology.] In passing to the Zoology of Ireland, it may be expected that not many varieties should be found between the Irish animals and those of England. It is asserted that no poisonous animal will live in Ireland; and even that no spiders will haunt Irish timber, which, as is said, was the cause why it was often employed in magnificent ceilings in the middle ages. As in fact England affords no poisonous animal, except the viper, this position implies, in other words, that no vipers are to be found in Ireland.

The Irish horses, called hobbys, are of a small breed, remarkable for the gentleness of their pace.

The Irish hound is one of the noblest animals of the class, and formerly celebrated for his size and vigour, but the breed is now almost extinct.

* Beaufort's Mem. 12. † Wade's Plantæ Rariores Hibern. ‡ Transact. Dublin Society.

Bede

Bede has commemorated the praise of Ireland for abundance of honey, and of milk, so that the country seems, even in early times, to have abounded in cattle. He also mentions the numerous herds of deer, which animal the progress of cultivation has now rendered rare. In various parts of Ireland are dug up enormous horns of deer, which some writers have imagined were of the species called moose deer in America; but Mr. Pennant has demonstrated that the animal must have almost doubled in size the American monster, which is sometimes found seventeen hands in height[11]. The Irish horns have been found of the extent of fourteen feet from tip to tip, furnished with brow antlers, and weighing three hundred pounds; the whole skeleton is frequently found with them. It is supposed that the animal must have been about twelve feet high.

MINERALOGY.—GOLD.] The mineralogy of Ireland has been recently ennobled by the discovery of considerable masses of native gold, in the county of Wicklow, to the south of Dublin. These were found in a brook, running west to east, to the river of Avonmore, where it is joined by the river Aghrim; and on a declivity of the mountain called Croaghan Kinshella, about seven English miles west of Arklow, and six south-west of the noted copper mines of Cronbane[12]. It is said that a jeweller who lately died in Dublin, often declared that gold from that spot had passed through his hands to the value of 30,000*l.*, the secret being retained for many years, and some pieces weighing to the amount of 70 or 80 guineas. It is now worked for government, and it is said that a very massy vein has been recently discovered, which it is hoped will greatly benefit the country; for mines have in all ages, ancient and modern, enriched and improved the countries where they were found, and the exception, if such, of Spanish America is to be assigned to causes of a different nature.

Gold is also reported to have been anciently found in the province of Ulster, in the sand of a rivulet called Miola, which falls into the north-west corner of the lake called Neagh[13]. As minute particles of gold are sprinkled through most regions of the world, so in some instances a few may find opportunities to combine, by the law of aggregate attraction, and thus excite notice without any chymical procedure. But to infer from such a discovery that considerable quantities of this precious metal must be found in the mountains whence the streams have chanced to convey golden sand, or even small fragments, might only lead to rash and speculative adventure; for even in the favourite regions of native gold, it has sometimes been found that a river or rivulet had actually carried down what little gold originally existed in the mountain. Another consideration remains well known in Peru and Hungary, namely, whether more gold may not be expended than procured, in working a mine, if virtually discovered.

SILVER.] The silver found in the Irish mines deserves more attention. Boate mentions a mine of this metal, intermingled with lead, which was wrought in the county of Antrim, and yielded a pound of pure silver from thirty pounds of lead. Another, less productive of silver, was found at Ballysadare, near the harbour of Sligo in Connaught; and a third in the county of Tipperary, thirty miles from Limerick. The ores of this last were of two kinds, most generally of a reddish colour, hard and glistering; the other, which was the richest in silver, resembled a blue marl. The works were destroyed in the Irish insurrections under Charles I. The mine, however, is now wrought on account of the lead it contains.

COPPER.] Copper ore is found in various parts of Ireland, and many of the mines contain evident marks of their having been wrought at a former period. That at Cronebane and Ballymurtagh, in the county of Wicklow, is of pyrites in argillite strata. It contains from 7 to 10 *per cent.* of copper; and when broken is sent to

[11] A. Z. Vol. i. p. 23. [12] Philos. Trans. 1797. [13] Boate, p. 69.

Swansea or Neath to be smelted. The separation of copper from its sulphate by means of iron is practised here to a great extent*. The Ballymurtagh mine was opened in 1755, by Mr. Whaley, who acquired a large property from it. In Ross island, in the lake of Killarney, a copper mine is now working, where rich grey copper ore is procured in a matrix of quartz, having about 30 *per cent.* of the metal. At the same place are found native copper, ruby, copper ore, malachite, and copper pyrites in great variety. The chief difficulty in procuring the ore arises from the water of the lake, which requires much labour to keep it out. There is also a copper mine on the opposite peninsula of Mucruss, which is not wrought at present. Near Newport, in the county of Tipperary, there is a rich mine of yellow pyrites, lately opened, which promises to be very profitable to those concerned in it.

Iron.] One of the chief mineral productions of Ireland is iron, the mines of which were little known till the time of Elizabeth. Boate divides the iron mines of Ireland into three descriptions: 1. What he styles the bog mine, or what is now termed lowland ore, found in moors and bogs: the ore resembling a yellow clay, but mouldering into a blackish sand. 2. The rock mine, a bad sort, the ore intimately combined with stone. 3. That found in various mountains, the ore spheric, and of a whitish grey colour: balls of the best ore contained kernels full of small holes, whence the name honey-comb ore. Boate praises this iron as frequently rivalling that of Spain; and his work may be consulted for the manner of conducting the founderies.

Lead, &c.] Lead is found in great abundance at Donally, near silver mines, in the county of Tipperary, before mentioned; at Ross island; near Cloghnakilty in the county of Cork; and in the county of Wexford. That at Ross Island is steel-grained galena, and has often veins of copper pyrites running through it. At Donally, besides galena, there is very rich white lead-ore. Grey cobalt-ore is found at Mucruss, in Kerry; and when the late Mr. Raspe was in Ireland, he found it used for repairing a road in the neighbourhood. There is also manganese and blende, both brown and black, in great abundance, in various parts of the country.

Coal.] The beds of coal to be seen in various regions of Ireland have not yet been explored to their proper extent. That of Kilkenny, found at Castlemoor, is deservedly celebrated among mineralogists, as the purest which has yet been traced in any quarter of the globe. Even as early as the time of Boate, coal was accidentally discovered in an iron mine, in the county of Carlow.

One of the most beautiful marbles of Ireland is found near Kilkenny; and others have been discovered in various parts of the island. Boate brands the free-stone of Ireland as being liable to imbibe the moisture of the atmosphere; to prevent which effect it was necessary to incrust the walls with brick, or to line them with wainscot. Slate of various kinds is also abundant.

In the basaltic region of the county of Antrim, is a white lime-stone, which resembles chalk in many respects, especially in containing nodules of flint; but is much harder than chalk, from having a greater quantity of water of crystallization†. In the county of Clare has been found fluor resembling that of Derbyshire. Near Belfast is a large stratum of fine gypsum; and fuller's earth has been found in several counties of Ireland.

Mineral Waters.] For mineral waters Ireland has never been famous. There is a spring, as already mentioned, at Lucan, more celebrated from fashion than from potency. As Ireland contains abundance of iron, it is almost unnecessary to add that

* Frazer's Statist. Account of Wicklow. † Mushet in Philos. Mag.

there

there are many chalybeate waters in several parts of the country. The most remarkable are that of Ballynahinch in the diocese of Dromore; Ballyspellan, not far from Kilkenny; and Castleconnel, in the county of Limerick. Swanling bar, in the county of Cavan, near Lough Erne, is much frequented on account of its sulphureous waters; and Mallow, in the county of Cork, on account of a soft and tepid spring, of the same nature as the hot wells of Bristol *.

NATURAL CURIOSITIES.] Among the natural curiosities of Ireland would, in ancient times, have been mentioned the purgatory of St. Patrick, a miserable monkish delusion. At present the lake of Killarney attracts more deserved devotion. This picturesque expanse of water is about ten miles in length, and from one to seven in breadth: it is divided into three parts, called the upper, lower, and Muckruss lake; and is surrounded by an amphitheatre of mountains, clothed with trees, whose verdure is contrasted with intervening rocks. The Arbutus, with its scarlet fruit and snowy blossoms, here vegetates in great luxuriance. Nor are cascades, and other features of rural beauty, wanting to complete the scene[14]. The isle of Innisfallen is not only romantic, but of venerable fame for the annals there written.

The petrifying power of Lough Neagh has been found, as already mentioned, rather to reside in the circumjacent soil[15]. The petrification seems to be chiefly of oak and holly; and the stump of a tree with its roots has been found wholly petrified; but from the account given by Mr. Smith the petrification seems to be slight.

What is called the Giant's Causeway must be distinguished among the most remarkable of the curiosities of Ireland. When we recollect that a similar production, the celebrated island of Staffa, remained unnoticed till within these thirty years, we shall be the less inclined to wonder that the Giant's Causeway is an object of recent observation, and has escaped the notice of Giraldus Cambrensis, Stanyhurst, and even of the accurate and ingenious Ware: the first account is that given by Sir R. Buckley in a letter to Dr. Lister, 1693. This surprising collection of basaltic pillars is about eight miles north-east from Coleraine[16]. The adjacent coast is verdant but precipitous; and from it the Causeway projects into the sea, to an unknown extent. The part explored is about 600 feet in length; the breadth from 240 to 120; the height from 16 to 36 feet above the level of the strand. It consists of many thousand pillars, mostly in a vertical position, some of them high, others broken, and, for a considerable space, of an equal height, so as to form a pavement. They are closely compacted together; though the form be various, trigonal, tetragonal, pentagonal, hexagonal, and heptagonal; the most numerous are the pentagonal. The pillars are rarely composed of one entire piece, but mostly consist of short or long joints, either plane, or concave corresponding with convex. The pillars are from 15 to 24 inches, or more, in diameter. The adjacent shore is mostly the common crag; but there are a few irregular pillars on the east; and towards the north-east, what is called the organ, in the side of a hill, consisting of fifty pillars; that in the middle 40 feet high, the others gradually diminishing. Similar pillars are also found a mile and a half inland, four miles to the west of the Giant's Causeway.

The learned Dr. Pococke examined this remarkable object with great care, and gave an account of it in the Philosophical Transactions. Mr. Hamilton has recently investigated the northern coast of Antrim with scientific skill; and some particulars shall be extracted from his account. The grand features of this coast are the capes of Bengore and Fairhead, precipitous promontories distant about eight miles. Bengore is composed of several smaller capes and bays, and contains a vast quantity of columnar

* Beaufort, Mem. [14] Young, i. 444, &c. [15] Boate, p. 122. [16] Ibid. 150.

basalt.

basalt. The cape called Pleskin presents a magnificent gallery, or colonade, about 60 feet high, with a lower gallery about 50. The lower ranges contain the most sharp and exact columns. The promontory of Fairhead offers pillars of greater length, and coarser texture; and similar stones are found in the mountain of Dunnel, between Coleraine and the river Bush; in the small isle of Raghry, two miles north of Fairhead; and in various other circumjacent quarters, along a coast of fifty miles in length, by two in breadth. Nay, imperfect appearances of the same kind may be traced even to the lake of Neagh, and mountains of Derry; so that the effects have operated to a space of more than 40 miles in length, and 20 in breadth, that is above 800 square miles. Mr. Hamilton might have added, that even the island of Staffa, at the distance of 100 miles, seems to form part of the same series, which may be carried to an unknown extent, through the bed of the intervening sea. The basalt of the Giant's Causeway is of a very compact texture, and the angles of the pillars have preserved their sharpness, though exposed to the sea, for perhaps two or three thousand years[17]. The origin of this substance is matter of intense dispute between the Vulcanists and Neptunists; but such geological discussions are foreign to the nature of this work. Suffice it to observe that basalt contains a mixture of silicious and argillaceous earth, together with iron to the amount of one quarter; a proportion of that universal pervading mineral, which may well arrange basalts under the class of iron; and it is remarkable that some hematites when broken present the same columnar appearance. Mr. Hamilton infers that the pillars of the Giant's Causeway are magnetic; and says, that in the semi-circular bays about Bengore the compass is much deranged. The same shore also presents horizontal and bending pillars, like those of Staffa; the attendant minerals are zeolite in the irregular basalt, steatite, and bits of agate, red ochre, and iron ore. Mr. Hamilton, pursuing the Vulcanic theory, even adds pumice and piperino; but these substances are rejected by Mr. Kirwan, who infers that the detection of clay, steatite, or zeolite, in basalt, is a proof that it is not a volcanic substance.

Among the natural curiosities of Ireland must not be forgotten the Dargle, about 12 miles to the south of Dublin, an enchanting glen, finely wooded with oak, and near a mile in length, with high precipices, and a picturesque river, which Mr. Young describes as a singular place, and different from any which he had seen in England[18]. In the neighbourhood of Mitchelstown, at the foot of the Galtee mountains, is a cave in a lime-stone rock, the entrance of which is narrow; but from a vault, of about 100 feet long, and 50 or 60 in height, there extends a winding course of not less than an Irish half mile, exhibiting great variety of appearances, sometimes that of a vaulted cathedral, supported by massy columns with incrustations of spar, nearly as brilliant as the Bristol crystals. Mr. Young prefers this cave to that of the peak in Derbyshire; and has also esteemed it superior to the Grau d'Aucel[19].

IRISH ISLES.

The few, and small isles around Ireland are unimportant, but must not be wholly omitted. To the north-east of Dublin is Lambey, a small island already mentioned; and at the south-east extremity of Ireland appear the rocks called Tuskard and the Saltee isles. At the southern extremity is the isle of Clare, about three miles and a half in length, and more remarkable for its southern promontory called Cape Clear, than for any other object. Turning to the north-west are the isle of Dursey, the Hog islands, and the Skelligs; to the north of the latter is Valentia off the coast of Kerry,

[17] Kirwan Min. i. 232. [18] Tour in Ireland, i. 111. [19] Ib. ii. 61.

which

which is followed by the Blaskets or Ferriter islands. The south Arran islands lie at the mouth of the noble bay of Galway, and are remarkable for a small kind of oats without any husk, and for large calves; the chief is near seven miles in length. A number of small islands encircle the coast which projects furthest into the Atlantic, such as Garomna, Littermore, Minish, Inisnee; and further to the north-west, Dunloghan, Omey, Crua, &c. Boffin was famous in the days of monastic sanctity, and has retained its ancient appellation. To the north is Achill, the largest of the Irish isles, being about 12 miles long by 10 broad. It is separated from the coast of Mayo, by a narrow channel; but no minute description of it has appeared. Inismurry is a small isle at the mouth of the bay of Donegal: and no other isles worth mention appear, till we arrive at the northern islands of Arran, off the coast of Donegal. The north-west extremity of Ireland is marked by Tory isle; and returning towards the east we meet with Inistrahull: and after an equal distance Rachlin, the Ricina of Ptolemy, and memorable as the retreat of Robert I. of Scotland.

FRANCE.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

NAMES.] FRANCE, deservedly celebrated amongst the most eminent European states, was probably known to the Phœnicians, though the superior fame of the metallic riches of Spain have almost eclipsed their discovery of Gaul. In the year 600, before the birth of Christ, according to the chronology of Usher, the Phocæans sailing from Ionia, founded Massilia, or Marseilles; yet Herodotus, who flourished a century and a half after that period, shews so little knowledge of Gaul as to suppose that the Danube arose in the Pyrenees. The ancient inhabitants were the Celts, of whom even Aristotle seems only to have learned that they inhabited the region above Iberia or Spain. The southern parts of Gaul became known at an early period to the Romans, who entered that region 120 years before the christian epoch, and soon afterwards founded the province termed Gallia Bracata: but the remainder of this large and fertile country was reserved for the discovery and conquest of Julius Cæsar. The ancients sometimes styled it the country of the Celts, but the only general name seems to have been Gallia, which, after the fall of the Roman empire, was supplanted by that of Francia, or France, because it was subdued and possessed by the Franks, an assemblage of tribes from Lower Germany.

EXTENT.] The extent of France before the recent acquisitions was computed at 148,840 square miles; and supposing the then population to be 26,000,000, would render 174 inhabitants to each square mile[1]. The boundaries were, on the west, the Atlantic ocean; on the south, the Mediterranean and Pyrenees; on the east, Savoy, Switzerland, and Germany; on the north, the Austrian Netherlands, the German sea, and English channel. It extends from about the 42d to near the 51st degree of north latitude; from about the 7th degree of longitude west from Paris to about the 5th on the east; being in length north to south about 600 British miles, and in breadth west to east about 560.

ORIGINAL POPULATION.] The original population of Gaul has been ably illustrated by many authors. The primitive inhabitants were the Celts, to whom no an-

[1] Bœtticher, p. 18. Mr Young, Travels i. 285, supposes France to contain 186,282 square miles, or rather, with Necker, 131,722,295 English acres; while Great Britain and Ireland may present an area of 99,335,589 acres.

FRANCE
ENGLAND
Southampton
Chichester
Exeter
Plymouth
Dover
I. of Wight
Start Pt.
Lizard Pt.
ENGLISH CHANNEL
STRAITS OF DOVER
NETHERLANDS
Liege
Bonne
Coblentz
Luxembourg
Treves
Simeren
Mayence
Worms
Spire
Dunkirk
Calais
St. Omer
Boulogne
Lille
THE NORTH
STRAITS OF CALAIS
Arras
Douay
Valenciennes
Cambray
Bapaume
Abbeville
R. Somme
SOMME
Dieppe
Cany
LOWER SEINE
Rouen
Havre de Grace
Seine R.
Alderney
Guernsey
Sark
Jersey
Cherbourg
Valogne
Coutances
CHANNEL
Caen
CALVADOS
Vire
Lisieux
EURE
OISE
Chaumont
Senlis
Mentdidier
Laon
Vervin
Mezieres
Sedan
ARDENNES
Rethel
Rheims
Chateau Thiery
St. Menehould
Verdun
Chaalons
MEUSE
Thionville
MOSELLE
Metz
Pont Mousson
Bitche
Deux Ponts
Landau
LOWER RHINE
Rhine River
Strasbourg
Luneville
MEURTHE
Nancy
S. Diey
Epinal
Colmar
UPPER RHINE
VOSGES
PARIS
Versailles
SEINE AND OISE
SEINE AND MARNE
Melun
MARNE
Vitry
Barleduc
Troyes
AUBE
UPPER MARNE
Chaumont
Joinville
Ushant
Brest
Morlaix
FINISTERRE
St. Brieux
NORTH COAST
Dol
Avranches
Quimper
Penmarc
Groais
MORBIHAN
Vannes
ILLE and VILAINE
Ernee
MAYENNE
Laval
ORNE
L'Aigle
Alencon
Mamers
EURE AND LOIR
Chartres
SARTE
Le Mans
LOIR AND CHER
Blois
Orleans
LOIRET
Montargis
Nemours
Sens
Auxerre
YONNE
Tonnerre
COTE D'OR
Dijon
UPPER SAONE
Vesoul
Gray
Basle
DOUBS
Besancon
Bellisle
Guerande
LOWER LOIRE
Nantes
Angers
MAYENNE AND LOIRE
INDRE AND LOIRE
Tours
CHER
Bourges
NYEVRE
Nevers
Beaune
JURA
Lons le Saunier
Pentarlier
M. Jura
SWITZERLAND
L. of Geneva
Geneva
VENDEE
Fontenay
Lucon
TWO SEVRES
Niort
Poitiers
VIENNE
INDRE
Chateauroux
ALLIER
Moulins
SAONE AND LOIRE
Macon
Bourg en Bresse
AIN
I. de Re
Oleron
Rochford
CHARENTE
Angouleme
LOWER CHARENTE
Saintes
UPPER VIENNE
Limoges
CREUSE
Gueret
PUY DE DOME
Clermont
RHONE AND LOIRE
Lyon
MONT BLANC
Chambery
Mont Blanc
ISERE
Grenoble
CORREZE
Tulle
DORDOGNE
Perigueux
Bergerac
CANTAL
Aurillac
UPPER LOIRE
Le Puy
ARDECHE
DROME
Valence
HIGH ALPS
Embrun
Gap
M. Cenis
Turin
ITALY
Bordeaux
GIRONDE
Blaye
LOT
Cahors
LOZERE
Mende
LOT AND GARONNE
AVEIRON
Rhodes
LANDES
GERS
Auch
TARN
Alby
Toulouse
UPPER GARONNE
HERAULT
Montpellier
GARD
Nimes
Avignon
Orange
MOUTHS OF THE RHONE
Arles
Aix
Marseille
LOW ALPS
Digne
VAR
Toulon
Frejus
MARITIME ALPS
Nice
LOW PYRENEES
Bayonne
Pau
HIGH PYRENEES
Tarbes
ARRIEGE
Foix
AUDE
Carcassonne
EAST PYRENEES
Perpignan
GULF of LYON
MEDITERRANEAN SEA
BAY OF BISCAY
SPAIN

terior people can be traced in the western regions of Europe; but on the south-west the Aquitani, of African descent, had passed from Spain; and on the north-east the warlike German tribes, known by the name of Belgæ, had seized on a third part of the country, where they introduced the Gothic language and manners. On the south also the German Gauls had diffused themselves into what was called the Gallia Bracata: nor must the Greek colonies be forgotten. The solidity and duration of the Roman conquests diffused the Latin language through all ranks. On the north-west extremity it is probable that there were remains of the ancient Celts, before the British colony proceeded there in the fifth century, and imparted a name to the district. The Franks from Germany no doubt contributed considerably to the population, and were the ruling people, though not the most numerous; and their language was in the course of a few centuries immerged in that of the former population.

PROGRESSIVE GEOGRAPHY.] The Romans first illustrated the Geography of Gaul, which they considered as divided into three chief regions, the Celtic, the Belgic, and Aquitanic; the Provincia Bracata being almost forgotten in the extent of their subsequent conquests. These regions were again subdivided into no less than seventeen provinces. On the subversion of the Roman power new names and divisions succeeded as Flandria, Lotharingia, Neustria, Burgundia, Vasconia, &c.[2]: while Aquitania and Provincia remained ancient names, though not within ancient boundaries. These were succeeded by divisions yet more modern, which in recent times have been supplanted by more minute departments.

ANCIENT PROVINCES.	DEPARTMENTS.	CHIEF TOWNS.	POPULATION.
Flandre Françoise.	Nord.	Lille.	774,450
Artois.	Pas-de-Calais.	Arras.	566,061
Picardie	Somme.	Amiens.	465,034
Normandie.	Seine Inférieure.	Rouen.	642,773
	Calvados.	Caen.	480,317
	Manche.	Coutances.	528,912
	Orne.	Alençon.	397,931
	Eure	Evreux.	415,577
Isle de France.	Seine.	Paris	629,763
	Seine and Oise.	Verſailles.	429,523
	Oise.	Beauvais.	369,086
	Aisne.	Laon.	430,628
	Seine and Marne.	Melun.	298,815
Champagne.	Marne.	Châlons-sur-Marne.	310,493
	Ardennes.	Mézières.	254,000
	Aube.	Troyes.	240,661
	Haute Marne.	Chaumont.	225,350
Lorraine.	Meuse.	Bar-ſur-Ornain.	275,898
	Moselle.	Metz.	353,788
	Meurthe.	Nancy.	342,107
	Vosges.	Epinal.	308,052
Alsace.	Haut-Rhin.	Colmar.	382,285
	Bas-Rhin.	Strasbourg.	444,858
Bretagne.	Ille and Vilaine.	Rennes.	488,605
	Côtes du-Nord.	St. Brieux.	499,927
	Finisterre.	Quimper.	474,349
	Morbihan.	Vannes.	425,485
	Loire Inferieure.	Nantes.	368,506
Maine and Perche.	Sarthe.	Le Mans.	387,166
	Mayenne.	Laval.	328,397
Anjou.	Mayenne and Loire.	Angers.	528,912
Touraine.	Indre and Loire.	Tours.	278,758

[2] D'Anville. Etats formés en Europe.

Ancient Provinces.	Departments.	Chief Towns.	Population.
Orlèanois,	Loiret.	Orleans.	289,728
	Eure and Loire.	Chartres.	259,967
	Loire and Cher.	Blois.	211,152
Berri.	Indre.	Châteauroux.	209,911
	Cher.	Bourges.	218,297
Nivernois.	Nièvre.	Nevers.	251,158
Bourgogne.	Yonne.	Auxerre.	239,278
	Côte d'Or.	Dijon.	347,842
	Saône and Loire.	Macon.	447,565
	Ain.	Bourg.	284,435
Franche-Compté.	Haute Saône.	Vesoul.	287,464
	Doubs.	Besançon.	227,000
	Jura.	Lons-le Saunier.	289,865
Poitou.	Vendée.	Fontenay-le-Peuple.	270,271
	Deux-Sèvres.	Niort.	242,658
	Vienne.	Poitiers.	250,807
Marche.	Haute-Vienne, comprising part of Limosin.	Limoge.	259,795
	Creuze.	Guèret.	216,255
Limosin.	Corrèze, comprising part of Upper Vienne.	Tulle.	243,654
Bourbonnois.	Allier.	Moulins.	272,616
Saintonge, comprising Aunis-	Charente-Inferieure.	Saintes.	402,105
Angoumois, comprising part of Saintonge.	Charente.	Angouleme.	321,477
Auvergne.	Puy de Dôme.	Clermont.	508,444
	Cantal.	St Flour.	246,016
Lyonnois. Forêt and Beaujolois.	Rhône.	Lyon.	345,644
	Loire.	Montbrison.	292,588
	Isére.	Grenoble.	441,208
Dauphiné.	Hautes-Alpes.	Gap.	118,322
	Drôme.	Valence.	231,188
Guyenne, comprehending Gascogne.	Dordogne.	Perigueux.	410,350
	Gironde.	Bordeaux.	519,685
	Lot and Garonne	Agen.	352,908
	Lot.	Cahors.	383,683
	Aveyron.	Rhodez.	328,195
	Gers.	Auch.	291,845
	Landes.	Mont-de-Marsan.	288,889
	Hautes Pyrénées.	Tarbe.	206,680
Béarn. Comté de-Foix. Roussillon.	Basses Pyrénées.	Pau.	385,708
	Arriege.	Tarascon.	191,693
	Pyrénées-Orientales.	Perpignan.	117,764
Languedoc.	Haute Caronne.	Toulouse.	432,263
	Aude.	Carcassonne.	226,198
	Tarn.	Castres.	272,163
	Gard.	Nimes.	309,052
	Lozere.	Mende.	155,936
	Ardéche.	Privas.	267,525
	Haute Loire.	Le Puy.	237,901
	Heraut.	Montpellier.	291,957
Provence.	Bouches-du-Rhone.	Aix.	320,072
	Basses-Alpes.	Digne.	140,121
	Var.	Toulon.	269,142
Corsica.	Golo.	Bastia.	103,466
	Liamone.	Ajaccio.	63,347

Ancient Names.	Departments Re-united.	Chief Towns.	Population.
Territory of Avignon, county of Venaissin, Principality.	Vaucluse, with the Bouches du Rhone.	Avignon.	190,180

Ancient

HISTORICAL EPOCHS.] The chief historical epochs of France may be arranged in the following order:

1. The primitive population of the Celts, and the conquests of the Aquitani and Belgæ.

2. The faint notices of the ancients concerning Gaul, from the establishment of the Phocean colony at Marseilles, to the conquest by Cæsar.

3. The complete disclosure of the country to the learned world by that great general; and the various revolutions and events of which it was the theatre under the domination of the Romans.

4. The final conquests of the country by the Franks under Clovis, about the year 490; and the conversion of the Franks to the Christian faith, five years after that period.

5. The obscure and distracted history of the Merovingian race (France being frequently split into small kingdoms), till its final extinction in the middle of the eighth century.

6. The Carlovingian race, which ascended the throne in the year 752, and was followed, twenty years afterwards, by the celebrated reign of Charlemagne, who carried the power of France to the utmost extent and splendour which it was ever to attain, having, in particular, subdued the greatest part of Germany, where he became the founder and first sovereign of what has since been styled the German Empire, A. D. 800, and which remained with his descendants for nearly a century.

7. The accession of the house of Capet in the year 987.

8. The crusades, in which the French bore the chief sway.

9. The wars with England. The acquisition of France by Henry V. and its deliverance by the Maid of Orleans, or rather by Charles VII. styled the Victorious.

10. The reign of Louis XI. who, crushing such powerful princes as were left after the English shock, may be regarded as the father of the absolute monarchy.

11. The reign of Francis I. called the father of the arts and letters, during which the French, who had been regarded as barbarians by the more civilized people of Italy, began on the contrary to be distinguished by superior refinement. This is also the first epoch of a standing army in Europe.

12. The intestine commotions with the Protestants, and massacre of St. Barthelemy.

13. The reign of Henry IV.

14. That of Louis XIV. too much extolled by the French, and too much degraded by other nations.

15. The recent revolution, which has astonished Europe, and which, in the singularity and importance of the events, rivals the pages of ancient history.

ANTIQUITIES.] Several ancient monuments exist in France which are ascribed to the first epoch. The Greek colony at Marseilles seems to have imparted some degree of civilization to the country, and the rude Gallic coins are evidently in imitation of the Grecian model. Many of them occur in the metal called by the ancients *electrum*, being a native mixture of gold and silver, probably from the ancient mines in the south of France. *

* In Picardy, and other parts possessed by the Belgæ, there are circles, and other monuments of the kind, which we call Druidic. Near the town of Carnac, on the coast of Vannes, in Bretagne, there is a grand monument of this kind, far exceeding Stonehenge, if the account be not exaggerated, which says that there are about 4000 stones, many as high as 18 or 20 feet, disposed in the form of a quincunx of eleven rows. (Monthly Magazine, Feb. 1801.) It is not a little singular that the Veneti, or people of Vannes,

The Roman antiquities in France are numerous, and some of them in excellent preservation. Those at Nismes are particularly celebrated, consisting chiefly of an amphitheatre, and the temple called La Maison Carrè. At Paris, there are also some curious remains of Roman architecture; but a mere enumeration of such remains would exceed the limits proposed. *

The other periods of French antiquity have been ably illustrated by the learned work of Montfaucon; and the disclosure of the grave of Childeric, near Tournay, in the last century, presented some of the most curious fragments. In an old tower of St. Germain des Prés were representations of several of the first monarchs of the Franks, and many of their effigies were preserved on their tombs at St. Dennis, and other places, till the late revolution.

The monuments of the Carlovingian race are yet more numerous, and Roman mosaics have illustrated the fame of Charlemagne. France has been so little exposed to foreign conquest or inroad, that several sacred edifices exist which were erected in this remote period. Of the later periods the monuments are so numerous, that it would be vain to attempt to enumerate them. One of the most singular is the suit of tapestry that was preserved in the cathedral church of Bayeux in Normandy, representing the beginning and termination of the grand contest between William and Harold, which led to the conquest of England by the Normans. It is said to have been the work of Matilda, wife of William; and bears every mark of that remote antiquity. The statue of Philip Augustus, in the church of the abbey of Victory, near Seules, was no mean relic of the arts of the middle ages; and St. Louis called forth many exertions of ecclesiastic skill. For later periods, Montfaucon and other learned authors may be consulted.

Vannes, who opposed so great a fleet to Cæsar, were Belgæ, as Strabo specially informs us, lib. iv.; an additional proof that these monuments are neither Celtic nor Druidic, but founded by the Belgic Goths, who long before the Christian æra possessed the greatest part of Europe.

M. Cambri, in his *Monumens Celtiques*, has recently published superior plates of that at Carnac. It is to be regretted that his learning and judgment do not equal his zeal.

* The remains of the Roman aqueduct, called the Pont du Gard, also deserve mention as a beautiful monument of antiquity. The name is derived from the rivulet Gardin, which passes through it, and joins the Rhone below Beaucaire. *Walckenaer.* The notes thus announced are of the French translator.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastic Geography.—Government. — Laws. — Population. — Colonies. — Army. — Navy.— Revenues. — Political Importance and Relations.

RELIGION.] THE religion of France was the Roman Catholic, till the recent Revolution established freedom of conscience, or rather gave an undue ascendancy to concealed atheism, which any superstition remarkably absurd has a tendency to produce. But the strongest minds as usual remained deistical, instead of flying from one extreme to another, the accustomed course of men of volatile reflection and confined knowledge.

Of late the Catholic system has been re-established, but the popular creed has been so much shaken that little religion remains, and the churches are chiefly frequented by women. There is no doubt that the Catholic scheme is more adapted to the French habits, than the serious monotony of the Protestant religion. A single Calvinistic

Sunday would reduce all France to despair; nor is it indeed reconcileable to reason that a day of rest, or festival, should be supposed sacred to melancholy. If this apparently small consideration could have been done away, the Protestant system would certainly have been found more advantageous to the national industry, and the marriage of the priests would have rendered them citizens and useful subjects of the new government. When Bonaparte assumed the reins of authority, the Catholics were so completely humiliated, that they would have accepted any terms; and it is to be regretted that the moment was not seized of introducing a moderate plan of Christianity, combining the advantages of the Protestant faith with such parts of the Catholic system as are more congenial to the habits of the people.

It must, however, be observed, that no toleration nor exclusive laws are known in France; but the public offices are alike open to every man, whatever be his religious persuasion.

The ecclesiastic geography of France comprised 20 archbishoprics, including Avignon; and 130 episcopal sees.[1] The number of the clergy has been vaguely computed from 80,000 to 400,000, but the just number seems to have been 150,000: and in this total, many, no doubt, have been classed who were merely singers in cathedrals, or lay-officers, and servants of the church.

GOVERNMENT.] The House of Bourbon has been recently restored to the throne of France, after the most lengthened and sanguinary revolution ever known in history. The wild and infatuated ambition of one man had irritated and disgusted all Europe, which arose in a mass to drive him from the throne. *Quos Deus vult perdere, prius dementat.* This soldier of fortune may be said to have been abandoned by all; for fear or hatred of the Bourbons alone continued to supply him with adherents. If his domination had unhappily lasted, all Europe must have been plunged into military barbarism; and the great empire, as an able French writer has observed, consisted of very small heads.* Even the chief shewed no proof of a truly great mind, but sacrificed magnificent objects for the most paltry considerations. A man may highly distinguish himself, but no sound train of thinking in any age or country ever exalted his obscure brothers or relations on that account.

Surrounded by flatterers (and he who loves flattery will never find a friend), he was ruined by conceptions that would disgrace the weakest of men, the miserable ambition of placing his brothers on the thrones of Europe. But knowing well that relations are not the surest friends, the extensive palace of the Louvre was to be refitted and beautified in order to serve as a kind of state prison for all their children, the hostages, as in Japan, for the fidelity of their fathers.

Despotic by nature and by a military education, he followed no counsels but his own will. An Italian by parentage, French blood cost him no pang. It has been the surprizing destiny of France to have been the prey of sanguinary strangers. Catherine of Medici, the chief authoress of the massacre of Barthelemy and Mazarine, might have served as beacons against another Italian administration.

[1] Young, i. 670. * Idealogie, tome iii.

Inaccessible

Inaccessible to men of merit and modesty, and clouded by the incense of intriguing courtiers, he formed from the latter his opinion of mankind, whom he despised and detested, as he did not hesitate to express. The lovers, of rational and moderate freedom shuddered at the perdition of a noble cause, while they were amazed at the manners of that mind, which, blind to the example of Washington, sought by a paltry pride to restore the barbarism of the middle ages when new dynasties sprung up like mushrooms in a night.

Revolutions, like the loss of a limb, are always to be regretted, and to be regarded as the last and most perilous of all remedies. When conducted by the aristocracy, as in England 1688, they are a storm which may eventually purify and invigorate the climate; but when they arise from the democracy below, they resemble an earthquake, which subverts the fairest edifices of social order, and leaves nothing but ruins and sterility.

Ye unavailing horrours, fruitless crimes! GRAY.

What have ye done for France or for mankind? What have ye left but bitter regrets that Louis XVI. and the constitution had not been preserved inviolate? Even the lessons left to posterity may be said to be wholly negative, and the examples prohibitory. We learn that a timely and oblique concession is safer than that which is direct, but long deferred. We learn that a national convention should never assemble in the capital, where it will be governed by the most corrupt portions of all the populace in the kingdom. At Orleans no jacobins could have * existed. Above all, a great lesson is held out to Europe of perpetual peace, for never were the futility and vain-glory of war so much exposed to the derision of all thinking minds, as by the transitory conquests of France and their theatric reverses.

The grand question of the superior glory of arts or arms, is at length finally decided. No man versed in history will deny, that Napoleon Bonaparte was the greatest military leader who ever adorned or disgraced the annals of mankind. The exploits of Cæsar, Alexander, or Hannibal, become shaded by such numerous and important campaigns and victories over enlightened and equal nations. The English alone withstood and conquered the greatest of all conquerors. To think otherwise, is only to diminish our own fame: and it is idle to suppose that twenty years can be effaced from the pages of history, which must proclaim, that as much as Wellington surpasses Marlborough, so did Bonaparte all former victors, ancient or modern. A greater hero or butcher never existed; but his whole conduct shews that he was without mind and without soul; whereas to be an eminent writer or artist these energies are indispensable.

The present government of France is familiar to every reader. It approaches to that of England, by a monarch fortified by the birth of one senate and the talents of another, while the constitutional Charter resembles the Bill of Rights, with this difference, that the Charter emanated from the throne. It would have been more laudable if it had

* That the people gain nothing, was learned from Cromwell, as the most fortunate general always seizes the throne, and a new swarm of oppressors replaces the former.

originated from the people, and been accepted by the King. The debates in the Chamber of Deputies have displayed more warmth than prudence, which even the French themselves regard as foreign to their national character. Immediately after the capture of Paris by Henry IV., assisted by English and German troops, a venerable advocate, pleading against the establishment of the Jesuits before the parliament of Paris, the chief court of justice, has observed: "Our nation has always been accused of want of prudence. As to justice, liberality, valour, and courage, we have enough, nay, too much; but of prudence too little." *

This want of prudence, of moderation, of foresight, of judgment, in a word of practical wisdom, the most precious of all human attributes, is accompanied by sudden ebullitions and evaporations of sentiment and passion, the most dangerous of all guides. In French politics (for in literature few nations have produced more cool and able heads) there reigns an infatuated presumption, a determined and fanatic ignorance of truth and wise counsels, that is proud of its folly and exults in its impertinence. One head in the cabinet is clear and cool; but even in a dialogue of two persons the conversation becomes electric, no one can listen; arguments are cut in useless morsels, and always answered before they are heard or understood. While in England the chief value is attached to GOOD SENSE, the French politicians run after a deceptive wild-fire, which they call *l'esprit*, a mere bundle of heterogeneous ideas, which, clashing together, produce vivid sparks, but no lasting light. The only remedy would be a law, that no man shall be a member of either chamber who had not studied mathematics for three years.

This *esprit* being adapted to female conversation, has singularly conspired with the dangerous influence of women, always governed by mere feelings and transient passions, to ruin France for many centuries; and by a singular absurdity, while the Salic law excludes women from the throne, they are permitted to reign during a minority, as if a regency were not far more difficult and dangerous in any country than a steady settled reign! Hence the horrors and calamities of Catherine and Mary de Medicis; and what with *l'esprit*, and what with *les femmes*, not a century has occurred in French history without civil wars.

These observations are given in the spirit of philanthropy, and it is hoped, that the lessons and preventives administered by the experience of centuries, will operate to the future tranquillity of France, and consequent repose of Europe. Yet there still exist violent spirits in France who blindly speak of revenge; as if those who began the acts of rapine and injustice were not the aggressors! The revenge belonged to the nations whom they insulted. It has been taken; and Justice holds her scales equal. Let her reign in peace!

As to universal conquest, the dream of Charles V. and Philip II. — look at Spain, debilitated and exhausted. France has reaped the same harvest: so let it sleep for ever; and let the grand European republic consist of nations only emulous of the arts, and of mutual felicity.

In the former æra, the senate was regarded as a chief authority in the state; and

* Arnauld, Playdoyé pour l'Université de Paris demanderesse, contre les Jesuites defendeurs, 12 Juillet 1594, p. 23. The designs of the Jesuits were never so fully exposed. It is hoped the *Censore Apostolico* will spare. See his defence of the Jesuits in the Italian translation of this work by Galanti.

perhaps

perhaps as representing the entire nation. But the Council of State, which meets in the Imperial palace of the Tuileries, and consists of about 30 members, is of more real solid authority; and the members, in general, men selected for talents and experience, form perhaps the most respectable society of Paris. Of these councillors of state four, with the minister of the police, superintend the general police of the empire; which vibrates like a spider's web from the extremities to the centre, and maintains a vigilance unknown even to the Bourbons.

In the whole of this constitution an Englishman is impressed with the most radical defect, the total want of all opposition. In France an opponent is an enemy, and must be guillotined: the passions being so vehement, that contradiction leads to assassination. It has been observed, that if the opposition were to be annihilated in England, the monarch would hire one, it being his interest that his ministers should not fall into gross mistakes. But in France absolute power has been the author of its own ruin, and ever will be, till the French character can tolerate an opposition.

The civil laws of France have been recently digested into one small volume. It is divided into three books, the first concerning persons, the second, property, and its different modifications, and the third the manner in which it may be acquired. This code is remarkable for elegance and perspicuity *.

Population.] The population of France was formerly computed, as already stated, at 26,000,000, but the recent acquisitions, if durable, would swell it to the formidable extent of 32,000,000. At all events France is a country teeming with population, and quickly resumes her vigour after stupendous losses, as Europe has repeatedly experienced.

Colonies.] The French colonies are at present unimportant, notwithstanding the addition of the Spanish part of St. Domingo †. The best of them have been convulsed and ruined for a season by intestine commotions, arising from the wild theory of the rights of man being extended to the negroes, who feel that they have a right to ruin and destroy, but none to build and improve. Perhaps the right of horses may next be discussed; and our race-horses be fastened to the plough, while our coach-horses start for the prize at Newmarket. The intercourse with the remaining colonies is so much obstructed by the English dominion of the sea, that they can hardly be admitted into an estimate of the present situation of France.

Army.] The political convulsions which have agitated this unhappy country, the enthusiasm, and yet more the despotism, of freedom, have occasionally within these few years swelled the French armies to the amazing computation of upwards of a million. But it may safely be doubted whether the real amount at any time exceeded 600,000 effective men, the French having swelled the number to intimidate their enemies, and the latter to apologize for their defeats. Under the royal government the army of France was estimated at 225,000, of which were in infantry 170,000, cavalry 44,000, artillery 11,000 ‡.

Navy.] The maritime power of France was formidable even to England, till the battle of La Hogue, since which the British flag has reigned triumphant on the ocean, and the struggles of France, though often energetic, have encountered the fixed destiny

* Paris, 1804, 4to. 8vo. 12mo.

† In 1810 France may be said to have no colonies.

‡ By the Etat Militaire, a calendar revived, for the eighth year of the republic, it appears that the French armies consisted of 110 demi-brigades, each of three batallions, and when complete of 3,200 men: of 30 light demi-brigades of a like number: eight regiments of foot artillery, each of 20 companies; eight of horse-artillery, each of 466 men: 26 regiments of cavalry, and 20 regiments of dragoons, each of 800 men: 25 regiments of chasseurs, and 12 regiments of hussars of the like number. The whole, without including the engineers, miners, &c. &c. forming a force of 413,728.

It is supposed that the conscription, the present oppressive mode of raising soldiers in France, might, if carried into full effect, present a mass of about a million of soldiers. *Walckenaer.*

of inevitable defeat. So frequent, fatal, and decisive, have been the recent humiliations of the French navy, that hardly the semblance of a warlike fleet could be presented, except by the constrained assistance of Spain. About 20 ships of the line constitute the maritime power of France, being not above one quarter of its former extent. Nor can the loss be easily redeemed, for though ships may be bought or constructed, it must be the labour of many years to form a numerous body of experienced seamen.

REVENUES.] The revenue of France was formerly computed at about 30,000,000*l.* sterling; from which, after deducting the expence of collection, and the payment of the interest on the national debt, there remained clear about 18,000,000*l.* The national debt may be regarded as greatly reduced; but any attempt to calculate the present state of the revenue must be vague and inconclusive. According to the most recent accounts it amounted to about 600,000,000 livres, or about 25,000,000*l.* sterling *.

The common current money of France has been computed at 90,000,000*l.* sterling, while that of Great Britain has been estimated at 40,000,000. The late conquests have enriched France, and especially Paris, with the rapine of many provinces; and the generals vie with the Romans in wealth and luxury.

POLITICAL IMPORTANCE AND RELATIONS.] The political importance and relations of France continue to be vast; nor was the prodigious power of this state ever so completely felt and acknowledged, as after a revolution and a war which threatened her very existence. When expected to fall an easy prey, she suddenly arose the aggressor, and has astonished Europe by the rapidity and extent of her victories. The rivalry of many centuries between France and England sunk into a petty dispute, when compared with this mighty contest, which will be felt and deplored by distant posterity. Yet by the protection of all-ruling Providence the British empire rose superior to the struggles, and remained free from those scenes of carnage and devastation, which attended the French progress into other countries: and the French navy being reduced to so insignificant a force, Great Britain has less to apprehend from France, than at any former period. Yet this invaluable advantage is somewhat diminished by the decided preponderance of French power on the continent; particularly in Holland, which formed the grand chain of our commercial intercourse. After all the continental powers have failed, it would be vain to suppose that any one of them, single and detached, can be really formidable to France. And though some thousands of miserable peasants may be at any time induced by foreign gold to form an insurrection in any country, and

* M. Walckenaer says, that the revenue 1804, was 700,000,000 of francs; and the interest of the public debt is about 84,000,000. See his long and curious note upon this subject, vol. i. p. 60, of the French translation. M. Donnant, who is well versed in statistics, communicated to me the manuscript of an important work upon this subject, in which he estimates the revenue at more than 800,000,000 during war, and about 700 in peace. The taxes are doubtless heavy, but there being no privileged classes, the lands are more fully cultivated, and the wealth more equally divided. The constituent assembly had adopted the system of the œconomists, that of direct impost; but it was found alike grievous and inefficient. At present the contributions are *Fonciere*, *Mobiliaire*, and *Personelle*, with stamps, customs, patents, or permissions to shopkeepers, (a kind of shop-tax,) lotteries, *octrois*, and *doits de passe*, and taxes on carriages and snuff. The national domains also form a resource; but the *Comptabilité Nouvelle* is arranged. The national debt seems about 50,000,000 sterling.

The *Comptes Généraux du Tresor Public*, Paris, at the Imperial press, 1805, 4to. are now before me. They were presented to the emperor by *Barbé Marbois*, a minister of known exactness and probity; but the various years are so confounded, that it becomes a matter of calculation to discover the receipt and expence of 1804. From the prefatory address to the emperor, p. 13, it appears, that 7,000,000 have been assigned for repairing the highways, 2,000,000 for the noble road by Mont Simplon, a like sum for the great bridges; 6,000,000 for canals and drying marshes, 2,500,000 for internal navigation, and 3,000,000 for the restoration of the sea-ports. In page 128, 129, the annuities are stated at 19,288,550 francs, and the pensions at 24,891,177. It appears from p. 111, that the total receipt of the twelfth year was 764,000,000, and the expence 768,000,000, or about 32,000,000 sterling.

desperadoes

desperadoes as easily found to conduct them, yet there is little cause to suppose that France would be divided against itself; for the love and admiration of his country may be pronounced essential passions of a Frenchman, who despises a foreigner while he is under the necessity of requesting his assistance. The distance of Russia, the second, if not the first power on the continent, renders her favour or enmity of small importance to France; but between this last country and the Austrian power lasting jealousy and enmity have subsisted, since the reign of the Emperor Charles V.; and a collision of interests in Germany, Swisserland, and Italy have contributed to maintain this rivalry. The envied acquisition of Silesia, and other causes, having likewise excited a rooted hatred between Austria and Prussia, it is natural that the latter country should either conspire with France against the Austrian greatness, or connive at its fall. Yet to a calm and unprejudiced spectator it might appear the most sound policy for these three great powers to abandon inimical views, and to regard with a general eye of defence and jealousy the growing and already exorbitant power of Russia; which may in time consider them as provinces, and overflow Europe with another torrent of barbarism *.

* If the President of the French Senate, François De Neufchateau, had perused with candour this view of the political relations of his country, he ought to have refrained from publishing his long and violent attack upon all the political parts of this work, under the title of *Tableau des Vues que se propose La Politique Anglaise, dans toutes les Parties du Monde.* The author of this geography was then detained at Paris, and could not venture to reply, as a publication from a man of such weight as the President of the Senate, and such talents as François De Neufchateau, menaced him with no less than the Temple. At present, he may aver, that this long attack consists merely of misrepresented fragments; that no man can be more averse to kindle wars between nations, though he sometimes must argue upon the supposition that such wars may happen: that, in fine, the author wrote as a geographer and cosmopolite; and though he admired the maxim of Fenelon, "Inasmuch as I love my country better than myself, so I love the human "race better than my country;" yet is he to be blamed for having written with the feelings of an Englishman?

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the French have been so often delineated, that the theme has become trivial and familiar. The most pleasing parts of the portrait are vivacity, gaiety, politeness, a singular disposition towards social enjoyments, and that savoir vivre which enables the adept to dispose of his occupations and pleasures in an agreeable succession, free from listlessness or fatigue. In general Frenchmen regard care as a mortal poison, and study, if possible, to avoid its most distant approach. On the other hand ancient and recent events conspire to affix a sanguinary stain on the national character, which one would little expect amid so much gaiety, and seeming benevolence. The causes of this incongruity might afford an ample subject for philosophical enquiry. Even the violent changes which have taken place seem to have little affected their characteristic gaiety, and Paris continues to be one of the happiest cities in the world: while the screams of massacre resounded in some parts of the city, in others the theatres were crowded, and nothing was heard but sounds of pleasure.

The ancient and rooted enmity between France and England nourished many prejudices against the French character, which have since disappeared in the reports of more candid authors. Yet, with travellers accustomed to the elegance of English life, many of the French manners and customs cannot be reconciled to ideas of physical purity; and the example of the personal and domestic cleanliness of the English must still be recommended to imitation. The laws and decency of marriage are also frequently sacrificed; and the looseness of the French morals, in regard to the sex, has become proverbial. A republican form of government has not super-induced republican manners, nor has the liberty of divorce proved any bond of chastity. As every thing continues to be ruled by fashion, it is not unreasonable to hope that even virtue may become fashionable.

While some physicians have attempted to account for English melancholy from the quantities consumed of animal food, it appears on the contrary that a Frenchman will devour as much as two Englishmen, disguised, indeed, and modified, so as to beguile and stimulate the appetite to larger indulgence. In the difference of climate therefore, and in the use of light wines, must be sought the chief physical causes of this discrepancy. The houses of the French often display a strange mixture of magnificence and nastiness; and while even a cottage in England will shew attention to the comforts, conveniences, feelings, and infirmities of human nature, in France the nose may be assailed, while the eyes are enraptured. France has long afforded models of dress to all Europe, nor have the fashions of Paris yet totally lost their fantastic authority. In the frequent and ridiculous allusions to the ancient republics, none of which bore the most distant resemblance of modern France, it was natural that the Grecian and Roman dress should afford models of imitation, and an infallible consequence that the dress would become more elegant. In a country where life itself is an amusement it is

to be expected that the diversions should be infinitely varied. In the capital theatrical representations bear the chief sway, and every evening about 20 theatres are open and full. Yet these republicans do not rival their favourite Greeks and Romans, in opening theatres and amphitheatres at the expence of the government, an institution worthy of modern imitation, as to afford amusements to the people may frequently save them from finding their own amusements in drunkenness and other low vices *.

LANGUAGE.] The French language is the most universally diffused of any in Europe. In variety, clearness, and precision, and idioms adapted to life, business, and pleasure, it yields to no modern speech; but it wants force and dignity, and yet more, sublimity, so far as a stranger may venture to judge. The critics and academicians of the seventeenth century enacted such severe laws of purity, that, like gold reduced to the utmost fineness, it has become soft and incapable of deep impressions. The French language is a well known corruption of the Roman, mingled with Celtic and Gothic words and idioms. Even in the tenth century it continued to be called Romance; a name which afterwards passed to the poems and tales of chivalry, as being composed in this dialect. One of the earliest specimens of French prose is the history by Villehardouin, which was followed by Joinville's Life of St. Louis, and the copious and singular Chronicle of Froissart. But while the Italian remains the same from the days of Dante and Petrarca, the epoch of classical purity of the French language commences with the reign of Louis XIV. The recent revolution has introduced such exuberance of new words, and phrases, that a neological dictionary would be required to explain them.

LITERATURE.] The literature of France has in modern times excited great respect and admiration. In the bold exertions of inventive genius, and even in profound productions of philosophy, France cannot aspire to vie with Italy or England; but in the pleasing and beautiful paths of invention, and in books of elegant learning and exact science, she remains almost unrivalled. French literature, like that of the other modern countries of Europe, originates with ecclesiastics, who compiled chronicles and theological productions. Even in the Roman period some authors of respectability appeared in France, as Ausonius, a native of Bourdeaux; Sidonius Apollinaris, and others; and Severus Sulpitius, author of the Life of St. Martin, has been styled the christian Salust. Nor did the conquest of Gaul by the Franks break the golden chain of science, which was continued by Gregory of Tours, and other venerable writers. The collection of ancient historians of France is singularly complete, and important. In the eleventh century the use of the Latin began to be supplanted by the modern dialect. But it would be idle and superfluous to attempt to enumerate the crowd of modern authors, who have reflected honour on their language and country. Who is a stranger to the Roman grandeur of Corneille, to the tender and elegiac elegance of Racine, the tragic pomp and terror of Crebillon, the comic powers of Moliere, the naiveté, the subtle simplicity of La Fontaine, the placid instruction of Fenelon, the gaiety of Gresset, the caustic vivacity of Voltaire?

EDUCATION.] The state of education in all the Catholic countries was very defective, till the Jesuits acquired great estimation by their attention to this important department; to which if their exertions had been solely directed they would have proved a most useful body of men. The want of proper schools for the poor will, it is hoped, be remedied in the new course of things; and to this cause may perhaps be chiefly imputed the want of real and solid information, and of talent for political business, which have surprised the spectators of the French revolution. When the civil com-

* M. Walckenaer observes, that there is a distinguished difference between the inhabitants of France on the north of the Loire, and those on the south, in features, temperament, manners, and character. The last are not the best.

motions

motions in England destroyed all power, except that of knowledge, the number of men of talents, who arose in every department, infinitely exceeds that which the recent events of France have displayed. Nor, as ignorance naturally leads to crime, and the want of education at once darkens and hardens the mind, can this defect be excepted from the causes of the sanguinary events which have appalled Europe. National education has justly attracted the attention of the new rulers, with what success time must discover; for there is a wide difference between forming a plausible scheme, and the putting of it in lasting execution, with regulations and funds that support themselves. Under whatever form of government the ignorant will be found the most unmanageable; and those jacobines who attempted to extinguish what they termed the aristocracy of knowledge, united, as usual, every vice to consummate ignorance.

UNIVERSITIES.] France formerly boasted of 21 universities; in the north Douay, Caën, Paris, Rheims, Nanci, Strasbourg, in the middle provinces Nantes, Angers, Poitiers, Orleans, Bourges, Dijon, Besançon, and in the south Bourdeaux, Pau, Perpignan, Toulouse, Montpellier, Aix, Orange, Valence [1]. Of these the Sorbonne of Paris was the most celebrated; but it shewed an irremediable tendency to prolong the reign of scholastic theology. The academies and literary societies were computed at 39. Those of Paris in particular have been long known to the learned world, by elegant and profound volumes of dissertations on the Sciences, and on the Belles Lettres. Nor have public institutions of this kind been foreign to the consideration of the new government *.

CITIES AND TOWNS.—PARIS.] The ample extent of this country displays a corresponding number of important cities and towns. Paris, the capital, rises on both sides the river Seine, in a pleasant and healthy situation, with delightful environs. It is divided into three parts; the town, *ville*, on the north, the city in the middle, that part called the university on the south. It is mentioned by Cæsar [2] as being restricted in his time to an island in the midst of the Seine. An intelligent traveller supposes Paris to be one-third smaller than London [3]: and if so the inhabitants can scarcely exceed 400,000; yet some compute them at more than 600,000 †. The houses are chiefly built with free-stone, from quarries like catacombs which run in various directions under the streets; so that an earthquake would be peculiarly destructive, and might bury part of the city. The banks of the Seine present noble quays; and the public buildings are not only elegant in themselves, but are placed in open and commanding situations. The Louvre is arranged among the best specimens of modern architecture; and the church of St. Genevieve, now the Pantheon, is also deservedly admired; nor must the Tuileries, the Palais Royal, and the Hospital of Invalids be forgotten. Paris no doubt exceeds London in magnificence, but yields greatly in cleanliness and convenience; and the streets, generally without accommodation for foot passengers, loudly bespeak the inattention of the government to the middle and lower classes of men. The environs of the Bois de Boulogne, Mont Martre, Passy, St. Dennis, &c. are pleasingly diversified. The recent revolution has little impaired the

[1] La Croix Geographie, Tome i. 279.

* The present mode of education is by two sets of schools, the first called primary, for the earlier rudiments of instruction; the other called secondary, for Latin, &c. The denominations are not unobjectionable, a primary school rather denoting one of the first or highest order. These are followed by *Lycées*, or Lyceums, which supply the place of the ancient colleges. There are also special schools: as the college of France which still exists, schools of medicine at Paris, Montpelier, and Strasburg, schools of mines, &c. The public instruction is superintended by a minister named for that purpose; this office was deservedly filled by Fourcroy, who, when the author left France, was employed in visiting all the *Lycées* of the empire.

[2] Comm. lib. vii. 54.

[3] Young's France, i. 76.

† By an enumeration in 1803, the number was 547,756. Walckenaer.

beauty

beauty of Paris; on the contrary the rapine of several provinces has enlarged and adorned the public collections; and by enriching numerous individuals, has enabled them to increase their favourite city with new and beautiful streets and squares.

LYONS.] Next to Paris in extent and population was the noble city of Lyons, which was supposed to contain about 100,000 souls. As the chief manufactures were articles of luxury, silk, cloths of gold, and silver, &c. it was natural that this venerable town should be firmly attached to the ancient aristocracy, though with consequences incalculably fatal to its prosperity. During the infatuated reign of the jacobins, it was besieged, captured, and after the wildest and basest massacres, was doomed to final demolition. But as there are bounds even to rage and folly, this decree was only executed in part; though Lyons will probably never recover its ancient extent and opulence, for commerce when once expelled seldom returns.

MARSEILLES.] The third and fourth cities of France are Marseilles, and Bourdeaux; each peopled by about 80,000 souls. The foundation of Marseilles has been already mentioned, and the city remains worthy of its ancient fame, the port being at the same time one of the best and most frequented in the whole Mediterranean. The exchange is a noble building, and the new parts of the city are beautiful.

BOURDEAUX.] Bourdeaux was a prosperous city, but the trade must have suffered great injury. The port is ample and commodious, with extensive quays. The chief exports are wine and brandy, particularly the vin de Bourdeaux, which we term claret, because it is of a clear and transparent red, while tent and some other wines are opake. The theatre is the most magnificent in France, and the actors used to receive extravagant salaries; and as much as London exceeds Paris, so much did Bourdeaux, before the revolution, transcend Liverpool [4].

LISLE.—VALENCIENNES.] In giving a brief idea of the other chief cities and towns of France, it may be premised that those of the Netherlands formerly belonging to Austria, are reserved for separate description. But among those which formerly belonged to what was styled French Flanders, may be named Lisle and Valenciennes; the former more memorable for its strength, than for its manufactures of camlets and stuffs. The population is computed at 60,000. Valenciennes is also remarkable for the strength of its fortifications; yet on the 26th July, 1793, it surrendered to the English and Austrian army under the Duke of York; but was retaken by the French army in the following year. The chief manufactures, lace, camlets, and cambrics.

AMIENS, &c.] Amiens is a considerable town, with a population of about 40,000; but Rouen, formerly the capital of Normandy, contains 72,000 souls, and carries on a considerable trade. Brest is more remarkable as being the chief maritime arsenal of France in the North, than for its extent or population, which does not exceed 30,000. Nantes with a population of 56,000, is a beautiful commercial city, with a splendid theatre, and many new streets, but the environs are barren and uninteresting [5]. Orleans, a city of about 40,000 souls, is celebrated by two sieges which it sustained; one against Attila, king of the Huns, in the fifth century, the other against the English in the fifteenth. The duchy of Orleans has long been the appanage of a branch of the royal line, the revenue having been computed at the enormous sum of about 300,000*l.* sterling. Nancy in Lorrain is not equal to Metz in extent, but is one of the most beautiful cities in France. Strasbourg is a venerable city, with a population of about 40,000, seized by Louis XIV. in 1681, and confirmed to him by the peace of Reswick in 1697. The fortifications are strong; and the gothic cathedral presents the well-known spire of 574 feet in height.

TOULOUSE.] Few of the other inland towns deserve mention, except Toulouse, a

[4] Young, i. 60.

[5] Young's France, i. 104.

city

city of 50,000 souls; and the parliament of which was esteemed, under the old government, next in rank to that of Paris: the extent is great, but the manufactures are trifling, though here be the termination of the great canal, opened by Louis XIV., from the Mediterranean to the Garonne, a work truly magnificent, and which alone would preserve his memory to future ages. Montpellier, on the Mediterranean, with delicious and highly ornamented environs, and a noble aqueduct, is of considerable extent, but particularly celebrated by the salubrity of the air, and an ancient school of medicine. The prospect is singularly extensive, and interesting, embracing the Pyrenees on the one side, and on the other, the yet grander summits of the Alps[6].

EDIFICES.] Several of the most noble edifices of France are in Paris, and its vicinity. To those already mentioned must be added the palace of Versailles, rather remarkable however for the profusion of expence, than for the skill of the architect; the parts being small and unharmonious, and the general effect rather idle pomp than true grandeur*. The bridge of Neuilly is esteemed the most beautiful in Europe, consisting of five wide arches of equal size, instead of our small side arches which degrade the dignity of such fabrics. That of St. Maxence is by the same celebrated artist. The ancient cathedrals and castles are so numerous that it would be idle to attempt to enumerate them; and the French nobility were not contented, like those of Spain, with large houses in the cities, but had grand chateaux scattered over the kingdom, to which, however, they seldom retired, except when compelled by formal banishment from the court.

INLAND NAVIGATION.] The inland navigation of France has been promoted by several capital exertions. The canal of Briare, otherwise styled that of Burgundy, was begun by Henry IV. and completed by Louis XIII. opening a communication between the Loire and the Seine, or in other words between Paris and the western provinces. Passing by Montargis it joins the canal of Orleans, and falls into the Seine near Fontainbleau. This navigation of forty-two locks, is of great utility in inland commerce[7].

The canal of Picardy extends from the Somme to the Oise, beginning at St. Quintin, and forming a convenient intercourse to the provinces in the north-east.

CANAL AT LANGUEDOC.] But the chief work of this description is the celebrated canal of Languedoc, commenced and completed in the reign of Louis XIV. by Riquet the engineer, under the auspices of that able minister Colbert. Fifteen years of labour were employed, from 1666 to 1681, and the mechanical ignorance of the period was surprised at a tunnel near Beziers, of only 720 feet, lined with freestone. This noble canal begins in the bay of Languedoc; and at St. Ferriol is a reservoir of 595 acres of water: it enters the Garonne about a quarter of a mile below the city of Toulouse. The breadth, including the towing paths, is 144 feet; the depth 6 feet; the length 64 French leagues, or about 180 miles. The expence was more than half a million sterling.

The other canals in France are very numerous; the new canal of the Ourq rather resembles our New River, being chiefly intended to bring good water to the eastern extremity of Paris; but, though of supreme utility, they are too minute to enter into this general view of the kingdom.

[6] Young's France, i. 48. For a more ample account of the French cities, the reader may consult a long note of M. Walckenaer, in the French translation of this work, vol. i. p. 88.

* The author has since viewed this celebrated edifice with an eye of complete impartiality. Towards the garden it is truly noble; but the other front is degraded by the old little chateau of Louis XIII. built in a bad style, and disfigured with minute ornaments; which was preserved in the centre of the building, as a capricious object of comparison, in contradiction to the advice of the architect.

[7] Phillips, 51.

Under

Under this head may also be mentioned the noble embankment of the river Loire, called the Levè, extending from Orleans to near Angers. It is about forty feet wide at the base, its elevation about twenty-five, the paved road on the top, admitting three carriages abreast. This noble bulwark was erected to protect a flat country from the inundations of the river; but the date seems uncertain. It may probably be traced in the provincial histories.

MANUFACTURES AND COMMERCE.] For a century, extending from 1650 to 1750, Mr. Young[8] supposes France to have possessed the most flourishing manufactures in Europe; and French writers affect to speak of the English manufactures as being of recent fame. A sketch of this important subject, particularly interesting to Great Britain, as the rival of France, shall here be traced from that well-informed author. At Abbeville was a famous manufacture of broad cloth; and another at Louviers in Normandy. At the same place, and at Amiens, were manufactures of stuffs, worsteds, &c. and some of cotton. The manufactures of Orleans were stockings, and refined sugar. At Chateau Roux another manufactory of broad cloths; and in the same neighbourhood large iron forges. At Limoges an hundred looms were employed in weaving druggets of hemp and wool; and the paper mills amounted to seventy. The large woollen manufactory at Cahors had declined; but those of Montauban continued to flourish. At Montpellier were considerable manufactures of blankets and silk handkerchiefs; but those of Nismes were still more important in silk, cotton, and thread: and at Gange was the chief manufacture of silk stockings in all France. The Londrins for the Levant were chiefly made at Beg-de-Rieux, and at Carcassonne. At Pau are large manufactures of linen. Tour has long been celebrated for silks. Beauvais, one of the most active towns in France, supplies tapestries and printed callicoes. The fabrication of plate glass at St. Gobin is well known as the first in Europe. In melting the glass, beech-wood only is employed, which is supposed to be the chief cause of its superiority over that of England. At St. Quintin are made linen, cambric, and gauzes. Cambrics derive their name from Cambray; and the laces of Valenciennes have been long known. Lisle displays fine cloths and camblets. Mr. Young styles Rouen the Manchester of France, being a town eminent in commerce, and in manufactures of velvet, and cotton cloths; and Caen boasts of her silky fleeces. Bretagne in general has numerous manufactures of thread and linen. The fine cloths made at Louviere our author esteems the first in the world, and at the same place is a large cotton mill. Rheims is remarkable for woollens. The silk manufactures of Lyons were estimated to employ 60,000 people, the looms being computed at 12,000. Iron manufactures flourished at Nantes, Mont Cenis, St. Phillippe-en-foret, and several other places.

From this detail some idea may be formed of the commerce of France, for minute tables of which the reader is referred to Mr. Young's work, from which it appears that the chief imports are raw silk, wool, hemp, soda, and pot-ash, raw hides, tallow, and timber; and the chief exports, manufactured silks, woollens, and linens of various kinds, gloves, skins, soap, oxen, sheep, mules, and above all, wines and brandies. By the account for 1784, which did not include the provinces of Lorrain and Alsace, nor the West Indian trade, the statement was—

Total exports, 307,151,700 livres.
—— imports, 271,365,000

Balance, 35,786,700, or 1,565,668*l.* sterling.

[8] i. 569.

The trade with the West Indies gave a large balance against France, which in 1786 exported to the amount of more than 64,000,000 livres, but the imports exceeded 174,000,000. The average imports of France in 1788 were about twelve millions and a half sterling, the exports nearly 15,000,000. The imports of Great Britain in the same year were about 18,000,000, the exports seventeen and a half[9]. Since the French revolution the commerce of England has been constantly on the increase; while that of our rival has been almost annihilated *.

[9] Young, i. 520.

* Ample and authentic information upon these topics may be derived from the statistic accounts of the several departments of France, now nearly complete. They will form 108 octavo pamphlets, mostly written by the prefects themselves, and certainly reflect credit on the government.

A minute account of the productions and manufactures of France is also given by M. Walckenaer, in a long and instructive note to his translation of this work, vol. i. p. 126—150. As Lyons is celebrated for silks, Louvieres and Sedan for woollen cloths, so Strasbourg for madder and tobacco. See Laumond Stat. du Bas-Rhin.

M. Donnant observes, that the silk manufacture was introduced by Louis XI. about the year 1470. The silk mills in France are about 1,500, the looms about 28,000; besides 12,000 for ribbons, lace and galloons, and 40,000 for stockings; the whole silk manufacture occupying about 2,000,000 of people The looms for woollens are about 35,000; for cottons 24,000. Abbeville fabricates sails and broad cloths; Elbeuf, Louvieres, Sedan, broad cloths; Rouen linens; Bretagne linen, cordage, sails; Berri linen; Auvergne laces, papers, (that of Annonay is celebrated;) Montpellier liqueurs; Langres cutlery; St. Quintin *batistes* or cambrics; Paris glass; Sevres porcelain. The best carpets are made at the Savonnerie in the village of Passy, near Paris. Joüy, near Versailles, excels in printing linens; the manufacture is the property of a Swiss, and is said to occupy about 1,200 men, women, and children.

CHAP.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of so extensive a kingdom as France, may be expected to be various. In general it is far more clear and serene than that of England; but the northern provinces are exposed to heavy rains, which however produce beautiful verdure and rich pastures[1]. The author quoted has observed, that rain is seldom so incessant in England, as not to present interruptions in the course of every day; while on the continent it flows unabated. He divides France into three climates, the northern, the central, and the southern. The first yields no wines; the second no maiz; the third produces wines, maiz, and olives. These divisions proceed in an oblique line from the south-west to the north-east, so as to demonstrate "that the eastern part of the kingdom is two and a half degrees of latitude hotter than the western, or if not hotter more favourable to vegetation." The central division, Mr. Young considers as one of the finest provinces in the world, containing among others the district of Touraine, which the French particularly celebrate, yet it is exposed to violent showers of hail. The chief disadvantage of the third climate is the flies. "They are the first of torments in Spain, Italy, and the olive district of France: it is not that they bite, sting, or hurt, but they buz, teaze, and worry: your mouth, eyes, ears, and nose, are full of them: they swarm on every eatable, fruit, sugar, milk, every thing is attacked by them in such myriads, that, if they are not driven away incessantly by a person who has nothing else to do, to eat a meal is impossible." One great advantage of the climate of France arises from its being adapted to the culture of the vine, which flourishes in spots that would otherwise be waste.

FACE OF THE COUNTRY.] The face of the country is generally plain; and the only mountains deserving of the name are found in the south, in Auvergne and Languedoc, Dauphiné and Provence. Brittany corresponds greatly in appearance with Cornwall, and abounds in extensive heaths*. In Lorrain are found the mountains of Vosges, far inferior to the southern elevations. For beauty Mr. Young prefers the Limosin to any other province of France; yet much of the kingdom is finely diversified with hill and dale, and the rivers, particularly the Seine, are often grand and picturesque.

SOIL AND AGRICULTURE.] The variations of the soil have been ably illustrated by the same skilful farmer[2]. The north-east part from Flanders to Orleans is a rich loam. Further to the west the land is poor and stoney; Brittany being generally

[1] Young's France, i. 309.

* The marshes of La Vendee form a singular and rare feature in France, and contributed a natural refuge to the prolongation of the civil war. For an animated description, the reader may consult Walckenaer, i. 137.

[2] Young's France, i. 296.

gravel, or gravelly sand, with low ridges of granite. The chalk runs through the centre of the kingdom, from Germany by Champagne to Saintonge; and on the north of the mountainous tract is a large extent of gravel, probably washed down in primeval times; but even the mountainous region of the south is generally fertile, though the large province formerly called Gascony present many *landes*, or level heaths.

The same writer has ably illustrated the defects of French agriculture, which cannot be more effectually exposed than in his own words:—"In order the better to understand how the great difference of product between the French and English crops may affect the agriculture, of the two kingdoms, it will be proper to observe, that the farmer in England will reap as much from his course of crops, in which wheat and rye occur but seldom, as the Frenchman can from his, in which they return often.

An English course.		A French course.	
1, Turnips		1, Fallow	
2, Barley		2, Wheat	18
3, Clover		3, Barley, or oats	
4, Wheat	25	4, Fallow	
5, Turnips		5, Wheat	18
6, Barley		6, Barley, or oats	
7, Clover		7, Fallow	
8, Wheat	25	8, Wheat	18
9, Tares or beans		9, Barley, or oats	
10, Wheat	25	10, Fallow	
11, Turnips		11, Wheat	18
	75		72

"The Englishman in eleven years gets three bushels more of wheat than the Frenchman. He gets three crops of barley, tares, or beans, which produce nearly twice as many bushels per acre, as what the three French crops of spring corn produce. And he further gets at the same time three crops of turnips, and two of clover, the turnips worth 40s. the acre, and the clover 60s.; that is 12*l.* for both. What an enormous superiority! More wheat; almost double of the spring corn; and above 20s. *per* acre, *per annum*, in turnips and clover. But further, the Englishman's land, by means of the manure arising from the consumption of the turnips and clover, is in a constant state of improvement; while the Frenchman's farm is stationary. Throw the whole into a cash account, and it will stand thus:—

English System.	£.	s.	d.
Wheat, 75 bushels at 5s.	18	15	0
Spring corn three crops at 32 bushels, 96 bushels at 2s. 6d.	12	0	0
Clover, two crops	6	0	0
Turnips, three crops	6	0	0
	42	15	0
Per acre, per annum	3	17	8

French System.	£.	s.	d.
Wheat, 72 bushels at 5s.	18	0	0
Spring corn, three crops at 20 bushels, 60 bushels at 2s. 6d.	7	10	0
	25	10	0
Per acre, per annum	2	6	4

"In allowing the French system to produce twenty bushels of spring corn, while I assign

assign thirty-two only to the English, I am confident that I favour the former considerably; for I believe the English produce is double of that of France: but stating it as above, here are the proportions of forty-two on an improving farm, to twenty-five on a stationary one; that is to say, a country containing 100,000,000 acres produces as much as another whose area contains 168,000,000, which are in the same ratio as thirty-six and twenty-five[3]." For ample and numerous illustrations of the defects of the French system, the reader is referred to the same useful publication. In some of the provinces, however, the plans of agriculture correspond with the natural fertility of the soil; and others display a most laudable industry. A striking instance of the latter is the artificial fertility conferred on some of the barren mountains of the Cevennes[4]. As the waters which run down the sides carry considerable quantities of earth into the ravines, walls of loose stones are erected, which permit the waters to pass when they are clear; but when turbid their load of earth is gradually deposited against the wall, and affords a space of fertile soil. Successive ramparts are thus erected to the very top of the mountain; and the water, having no longer a violent fall, only serves to nourish the crops, which are moreover protected by planting fruit trees at certain intervals, so as to lend security and consistence to the new acquisition. By another process calcareous mountains, which generally rise in shelves, are rendered productive by cutting away the rock behind the shelf, which supplies materials for a low wall around the edge. The interval is afterwards filled with earth, and the barren mountain is crowned with luxuriant terraces.

WINES.] One of the most precious products of France is its wines, which are, in general, superior to those of any other country, and reputed among the luxuries even of those countries, which abound in valuable vineyards. The south-western districts produce what we call claret, which is by the French physicians ranked among the cold wines. The best vineyards are those of La Fitte and Chateau Margot. The wines of Champagne, the rose-coloured and the white, are rendered frothy and sparkling by art. Those of Burgundy, Clos-Vaugeot, Volnay, Pomard, Beaune, Macon, &c. are the most healthy ordinary wines, of a warm, generous, and invigorating quality. But an Englishman, accustomed to the supposed grape of Oporto, will find the elegant and healthy wines from the banks of the Rhone, more agreeable to his habits and constitution; that of Donzere being nearly equal in strength, and far superior in flavour to port, while that of Savasse is milder; but the best, perhaps, is that of Rochemaure. The Tavel is of a beautiful transparent red, and is said to resemble that of Shiraz in Persia; the taste is peculiar and singularly pleasing. Those of Hermitage* and Côte Rotie are well known. Among the white wines of this part of France that of Frontingnan, which we call Frontiniac, is well known for its rich and peculiar flavour, while the St. Pairet deserves mention for its singularity, being of an agreeable relish and tolerable strength, though in colour not distinguishable from water.

RIVERS.—SEINE.] The rivers of France form the next object of consideration; and among these four are eminent, the Seine, the Loire, the Rhone, and the Garonne. The first is one of the most beautiful streams of France, rising near Saint Seine, in the modern department of Côte D'Or, a portion of ancient Burgundy, it pursues its course to the north-west till it enters the English channel at Havre de Grace, after a course of about 250 English miles. It may here be remarked, that the length assigned to rivers is not calculated with exactness, a work of infinite and uncertain labour, but merely affords a comparative scale, to judge of the relation, which the course of one river bears to another.

[3] Young's France, i. 357. [4] Nicholson's Journal, iii. 295. * Near Tain on the Isere.

Loire.] The Loire derives its source from Mount Gerbier in the north of ancient Languedoc; and after a northern course turns to the west, entering the ocean a considerable way beyond Nantes, after a course of about 500 miles.

Rhone.] The Rhone springs from the Glacier of Furca, near the mountain of Grimsel in Swisserland; and after passing the beautiful vales of the Vallais, and the lake of Geneva, bends its course towards the south, and enters the Mediterranean. The comparative course 400 miles.

Garonne.] The Garonne rises in the vale of Arau in the Pyrenees. The course of this river is generally north-west. It extends to about 250 miles. After its junction with the Dordogne, it assumes the name of the Gironde.

The Seine is almost universally pleasing and picturesque; and the Loire presents noble features from Angiers to Nantes, but the rest of its immense course is disfigured with rough gravel[5]. The Garonne generally pervades a flat country, and is tamely fringed with willows. The Rhone is a noble and rapid stream.

France is adorned and enriched with many rivers of smaller course, and reputation; as the Saone which joins the Rhone near Lyons; the Lot and Dordogne which join the Garonne; and the numerous tributary streams of the Loire. The uncertainties of time and war as yet prevent the geographer from regarding the Meuse and Moselle, and even the Rhine, as rivers of France.

Lakes.] A few small lakes occur in Provence, and perhaps in some of the other provinces, but only adapted to the minute description of the topographer, France and Spain being singularly deficient in this pleasing feature of landscape*.

Mountains.] Before proceeding to the grand chain of mountains in the south of France, it may be proper briefly to mention a few mountainous tracts in the north. Those of Brittany are granitic and primitive, but like those of Cornwall of small elevation. They divide into branches towards Brest and Alençon. The Vosges†, in the department of that name, in the south of ancient Lorrain, are supposed to be connected with the mountains of Swisserland[6].

Mont Jura.] Mont Jura, a vanguard of the Alps, forms a boundary between France and Swisserland. If Mont Blanc be admitted among the French mountains, the other Alps cannot rival its supreme elevation. The ancient province of Dauphiné displays several alpine branches, which also extend through great part of Provence.

Cevennes.] To the west of the Rhone arises the grand chain of the Cevennes, which have been described by a recent author[7]. He observes that the Cevennes seem the principal centre of the primitive mountains of France, extending into several branches. The principal branch runs along the river Ardeche towards Ales.

[5] Young's France, i. 305.

* Some small but picturesque lakes occur among the Vosges, as the Lac Blanc near Poutroye, and those of Gerardmer and Longemer. Sivry, Obs. Min. sur les Vosges, Nancy, 1782, 8vo. p. 62, 203. The river La Vologne yields pearls. Ib. 109.

† The mountains of Vosges, and the district to the east, are by the Germans called the Hundsruck. If the French extend their boundaries to the Rhine, this interesting portion of Germany will form a valuable accession, including not only a great part of the Palatinate, with the cities of Mentz, Wurms, and Spire, but the countries of Simmern, Sponheim, Oberstein, Birkenfeld, and Zweybrucken, constituting the important duchy of that name, more generally called Deux Ponts, supposed to contain 180,000 inhabitants, and yielding a revenue of 500,000 florins. Considerable chains of mountains appear on the west and east of Deux Ponts, remarkable for mineral productions, especially mercury, and beautiful agates.

[6] Lameth. Theo. de la Ter. iv. 384. In the valley of Plancher les Mines is found green granite, a rare substance, of which tables and other ornamental articles are made at Paris. The highest mountain is about 4300 feet above the level of the sea.

[7] Ibid.

2. Another

2. Another traverses the Rhone on the side of Tournon and Vienne, towards the plains of Dauphiné. 3. That forming the mountains of Beaujolois, passing by Tarare, Autun, &c. till it be lost at Avalon. This branch is about 70 leagues in length, but in breadth sometimes not more than a league: it contains the copper mines of Chesi and St. Bel, and some lead mines. Coal is also found in the declivities. 4. The branch which, separating the bason of the Loire from that of the Allier, forms the mountains of Forez. It passes Roanne on the one side, and Thiers on the other, and is lost towards St. Pierre le Moutier. The plain of Montbrisson is bounded by these third and fourth granitic branches. 5. That which, separating the bason of the Allier from that of the Cher, passes by Clermont to Montluçon. 6. That stretching towards Limoges. 7. That from the Dordogne towards the Charente. 8. That dividing the Dordogne from the Garonne.

This account is not a little confused, as here are abundant branches without one trunk. The grand chain of the Cevennes runs from north to south, and sends out branches towards the east and west. In the modern departments of the Upper Loire and Cantal, are appearances which, in the opinion of eminent naturalists, indicate ancient volcanoes; but as these supposed appearances consist chiefly of basaltic columns, and elevations, some consider them as having no claim to a volcanic origin. This subject remains dubious; as pretended lavas may be particular stones in a state of decomposition*. Yet the numerous existing volcanoes in South America, supposed by many to have been a more recent continent, will compel the impartial inquirer, who will shun any exclusive system, to allow that many extinct volcanoes may exist; but he never will grant that basaltic columns afford the smallest presumption of a volcano, as they rarely appear in the neighbourhood of existing volcanoes, and are sometimes found resting on coal, which in case of fire must have been totally consumed. The rocks of Puy, Axpailli, and Polignac, rise in sudden and grotesque forms; but these appearances are sometimes assumed even by granite, as may be observed in Cornwall. The basaltic mountains of the ancient province of Auvergne are likewise too extensive to be produced by a single volcano, and a chain of volcanoes would be too bold even for conjecture. The northern part of the chain is styled the Puy de Dome, while the southern is called that of Cantal[8]. The Monts Dor form the centre, and are the highest mountains in France †. The chief elevation is that of the Puy de Sansi, which rises about 6,300 feet above the level of the sea, while the Puy de Dome is about 5000, and the Plomb du Cantal, the highest of that part, is about 6,200 feet. Near the Puy de Sansi is l'Ango, that gigantic mountain, and Ecorchade a shattered and wrecked elevation. The Plomb du Cantal is also accompanied by bold rivals, as the Puy de Griou, le Col-de-Cabre, le Puy Mari, and the Violent. This enormous assemblage of rocks covers an extent of about 120 miles, and according to the French authors is chiefly basaltic. The Puy de Sansi is capped with almost perpetual snow, followed in the descent by naked rocks and ancient pines: from its side issues from two sources, the river Dordogne, and many picturesque cascades devolve amidst

* The author has since received a considerable collection of specimens from this part of France, and entertains no doubt that they are volcanic. M. Daubuisson, a disciple of Werner, and a confirmed Neptunist, was equally convinced, in spite of all his scepticism, after an actual visit to the country. M. de Buch, a Prussian naturalist, was in the same predicament, and says the Puy de Dome is a granite, elevated and changed by subterranean vapours. See J. de M. No. 76. Nor can assent be easily refused to the chief of orogolists, Saussure, who has published, in the *Journal de Physique*, an account of an extinct volcano in the Brisgau.

[8] Voy. dans les Depart. Cantal, p. 5.

† Le Grand, in his interesting journey to Auvergne, has observed, that the common spelling of Mont D'Or is a solecism, the name Dor being the same with the river Dor, which joining the Dogne, forms the Dordogne.

basaltic

basaltic columns[9]. On the 23d of June 1727, Pradines, a village on the slope of one of these mountains, was totally overwhelmed by its fall, the whole mountain, with its basaltic columns, rolling into the valley. The inhabitants were fortunately engaged in the celebration of midsummer eve, around a bonfire at some distance[10]. These mountains are in winter exposed to dreadful snowy hurricanes, called *acirs*, which in a few hours obliterate the ravines, and even the precipices, and descending to the paths and streets, confine the inhabitants to their dwellings, till a communication can be opened with their neighbours, sometimes in the form of an arch under the vast mass of snow. Wretched the traveller who is thus overtaken. His path disappears, the precipice cannot be distinguished from the level; if he stand he is chilled, and buried if he proceed; his eye-sight fails amidst the snowy darkness; his respiration is impeded; his head becomes giddy, he falls and perishes. In summer, thunder storms are frequent and terrible, and accompanied with torrents of large hail, which destroy the fruits and flocks, which for six months pasture on the mountains, guarded by shepherds, who have temporary cabins of turf and reed, styled *burons*.

PYRENEES.] The Pyrenees remain to be described. This vast chain, known and celebrated since the days of Herodotus, may be considered with equal justice as belonging either to France or to Spain; but as the most productive and interesting parts are on the side of France, and her literati have exerted themselves in the description, while those of Spain have been silent, it seems at least equally proper to introduce the delineation here, which shall be chiefly derived from the recent accounts of Ramond and Lapeyrouse[11]. To the surprise of naturalists, the Pyrenees have been found to present calcareous appearances, and even shells, near or upon their highest summits, which are in the centre of the chain. Mont Perdu is considered as the highest elevation of the Pyrenees, ascending above the sea 1751 French toises, or about 11,000 feet English. The Canigou formerly usurped that honor, though it exceed not 1440 toises. Other noted heights are Tuccarroy, Marboré, the pic de Midi, the pic d'Arni, the Niege Veille, the Vigne Male, La Breche de Roland, &c.* The Pyrenean chain appears at a distance like a shaggy ridge, presenting the segment of a circle fronting France, and descending at each extremity till it disappear in the ocean and Mediterranean[12]. Thus at St. Jean de Luz only high hills appear, and in like manner on the east, beyond the summit Canigou, the elevations gradually diminish. The highest summits are crowned with perpetual snow. Blocks of granite are interspersed with vertical bands, argillaceous and calcareous, the latter primitive or secondary, and supplying the marbles of Campan and Antin, of beautiful red spotted with white, though the general mountain mass be grey. To the south and west the Pyrenees present nothing but dreadful sterility, but on the north and east the descent is more gradual, and affords frequent woods and pastures. Besides the dreadful fall of rocks, undermined by the waters, they are exposed to Lavanges, or the impetuous descent of vast masses of snow, called Avalanches in Swisserland, and have their glaciers and other terrific features of the Alps.

MONT PERDU.] According to Ramond[13] the very summit of Mont Perdu abounds with marine spoils, and must have been covered by the sea; an observation con-

[9] Voy. dans les Depart. Cantal, p. 13.

[10] Voy. dans les Depart. Cantal, p. 24. One vast block of stone, 90 feet long, and 26 thick, being too heavy to roll, sunk vertically, and the shock seemed an earthquake even at the distance of a league. Another mountain is said to have recently sunk, and disappeared in the south of France.

[11] Journal des Mines, No. 37, p. 35.

* See in the same Journal, No. 46, p. 757, an estimate of other Pyrenean elevations.

[12] Voy. dans les Dep. No. 67, p. 4.

[13] Journ. des Min. ut supra.

firmed by Lapeyrouse. This mountain is of very difficult access, as the calcareous rock often assumes the form of perpendicular walls, from 100 to 600 feet in height; and the snows, ice, and glaciers, increase the difficulty; nor did these naturalists attain the summit, though they could observe that the rock corresponded in form and nature with those which they ascended. A singular feature of the Pyrenees consists of what are called *houles*, or walls disposed in a singular form. Near the summit of Mont Perdu is a considerable lake, more than 9000 feet above the level of the sea, which throws its waters to the east into the Spanish valley of Beoussa; and which the travellers consider as a proof that Mont Perdu really belongs to Spain, and that Tuccarroy forms the boundary. The best maps of the Pyrenees are erroneous, as this lake has no connection with the noted cascades of Marboré, which flow from another lake to the west; and Lapeyrouse has pointed out other gross mistakes in the topography of this interesting district. He adds that it is probable that the sole access to the summit of Mont Perdu will be found on the side of Spain, there being three summits called by the Spaniards *Las Tres Sorrellas*, or the Three Sisters; the highest being to the north, and the lowest on the south, but separated, as would appear, by large glaciers. From this view of the Pyrenees, Lapeyrouse concludes that there exist chains of mountains, in which bands of granite, porphyry, trap, hornblende, and petrosilex, alternate vertically with primitive lime-stone, and are so intermingled as to prove a common origin. But in the Pyrenees these bands are surmounted by a secondary lime-stone, replete with marine spoils, and containing even skeletons of animals, so that he concludes that the highest mountains of the chain must have yielded to the fury of the ocean, and that the secondary parts alone now exist. Mr. Townsend[14] observes, that the lime-stone and schistus feed the vegetation on the north of the Pyrenees, while the south is barren and consists of granite; while, in fact, mountains are generally barren and precipitous on the south and west, because the most violent rains and tempests come from those regions. Yet this brief account of the Pyrenees must be closed with the observation, that while Saussure has explained with sedulous skill the substances which compose the Alps, there is no work concerning the Pyrenees of great research, or patient investigation*.

FORESTS.] The forests of France are numerous and extensive; and as wood is the general fuel, attention to their growth becomes indispensable. Two of the most remarkable are those of Orleans and Ardennes, the former for extent and the numerous troops of banditti who used to invest its precincts; the latter for ancient fame and events of chivalry. The forest of Ardennes extended from Rheims to Tournay, and on the north-east to Sedan in the present department of the Ardennes. To these names might be added the forest of Fontainbleau, and many others, which here to enumerate would be superfluous, as almost every seigneur had his forest, in which he passed the greatest part of his life among his brethren the wild beasts[15].

BOTANY.] Notwithstanding the pains that have hitherto been bestowed by French naturalists in illustrating the flora of their native country, it still remains in an imperfect

[14] Spain, i. 89.

* M. Ramond has since visited the summit of Mont Perdu, and found it to consist of a black fetid lime-stone or marble, in which sand may sometimes be observed. The height is 1763 fathoms, or 10,578 feet. Journal des Mines, No. 83. He shewed to the author at Paris a noble collection of botany of the Pyrenees, which he is about to publish. The central line of the Pyrenees is granite; but the far superior elevation of the lime-stone forms a singular feature. The granite is white, as in the Alps, and most of the grand chains of mountains.

[15] William of Malmsbury says that Rufus, the son of the Conqueror, established many forests and abodes for the wild beasts "whom he loved as if he had been their father."

state: particular districts, as the environs of Montpellier, of Lyons, and of Paris, have been surveyed with considerable accuracy, but many chasms must yet be filled before a comprehensive history can be made out of the vegetable productions of France. So great indeed is its extent, and so various its climate, that probably more than half the European species of plants may be found within its boundaries. The bleak shores of the north, the fertile plains on the Belgian frontier, the rich vales of the Loire, the Rhone, and Garonne, the towering heights of Auvergne, the exterior ridges of the Alps and Pyrenees, the sunny exposure of the Mediterranean coast, offer such striking differences of soil and temperature, as evince at once a most abundant catalogue of indigenous plants. That country which produces in full and equal perfection wheat and apples, maiz and grapes, oranges and olives, the oak and the myrtle, must doubtless exceed all other European countries of equal extent in the variety and richness of its vegetable treasures. A bare enumeration of them would occupy more room than can be allotted to them in a work like the present. We shall therefore only particularize such as are the most generally interesting to the English reader.

If France be divided by imaginary lines from east to west into nearly four equal parts, the most northern of these divisions will bear a considerable resemblance in its climate and vegetable produce to the south of England; the second differs principally from the first in exhibiting here and there a few vineyards; in the third, fields of maiz begin to make their appearance; and the fourth is distinguished from the preceding by intermixing groves of olive trees with its exuberant harvests, and its overflowing vintages.

The southern and eastern provinces of France, being those which have been the most carefully explored, as well as containing the most interesting plants, are chiefly referred to in the following list *.

The species belonging to the large family of compound flowers, are very numerous. Of these several are introduced at present into our flower gardens; such are the *globe thistle;* several species of Centaurea, among others Centaurea benedicta, *blessed thistle; lavender cotton; mountain southernwood*, and *common southernwood*, both of them plentiful on the rocks of Dauphiné and Provence. A few esculent vegetables that grow wild in Languedoc and Provence, but are cultivated in our kitchen gardens, arrange themselves also under this class; for instance, *artichoke; salsafy;* and *scorzonera.*

The cucumber, the melon, the gourd, and other kindred genera, though cultivated largely and with great ease in the south of France, are yet natives of hotter climates; only one of this natural family, the Momordica elaterium *squirting cucumber*, properly belongs to the French flora; it occurs in a truly wild state, on low loose rocks, in Provence and Languedoc.

Of the ringent or galeated plants, numerous species are natives of France, not many of which, however, have found their way into English gardens; the following are almost the whole that are in any request for their beauty or use, all of which are natives of Languedoc, Provence, or Dauphiné: *prickly and smooth acanthus; Montpellier snapdragon; garden hyssop; spike lavender; rosemary;* and *garden sage.*

The nearer in general any country is situated to the tropics, the greater is the abundance and beauty of the bulbiferous or liliaceous plants that inhabit it: the south of France is particularly rich in these splendid and fragrant vegetables, several of which have been naturalized in our gardens, and constitute their principal ornament. Of the genus Allium *garlic*, no less than 36 species are natives of France, several of

* Lamarck, Flore Françoise. Tournefort, Hist. des Plants, &c. Villar's, Hist. des Plants de Dauphiné. Durande, Flore de Bourgogne. Lindern, Hortus Alsaticus.

which

which have been admitted for their beauty into English flower-gardens, of these the allium Monspessulanam, *Montpellier garlic*, is perhaps the chief. The large *branched Asphodel*, Asphodelus ramosus, a flower of great beauty and poetic fame, is by no means uncommon in Provence. Hemerocallis fulva, *tawny day-lilly;* Hyacinthus botryoides, *clustered hyacinth;* Ornithogalum pyramidale, *spiked star of Bethlehem*, are all found in the Mediterranean provinces of France, as are also the *orange*, *pompadore*, and *martagon lillies; white hellebore; Narcissus* and *Jonquil*. The shore of Hieres is adorned by the Pancratium maritimum, *sea daffodil*, growing luxuriantly on the very beach; and on the lower cliffs of the Nicene and Genoese Alps, the gigantic Agave, *American aloe*, now naturalized to the soil and climate, raises her stately flower-stem to the height of 20 or 30 feet, and looks down on every herbaceous plant of European origin.

Allied to the bulbiferous are the tuberous rooted plants with sword-shaped leaves, several species of which are found in France; the most beautiful and worthy of notice are *corn flag;* abundant in the cultivated lands of the middle and southern provinces; the Iris Germanica, in Alsace and on the German frontier; and Iris pumila and maritima, two elegant little plants that are occasionally met with in Provence and Languedoc.

Of the papilionaceous plants that are natives of this country, several deserve notice for their use or ornament. Lathyrus tuberosus, a vegetable of the pea kind, grows wild in Alsace, and is cultivated in many parts of France for its large esculent tuberous roots; the *great lupin*, varying with blue, white, or flesh coloured blossoms, and the *chick pea*, are met with in the southern provinces growing spontaneously, but are more frequently cultivated in large fields as food both for cattle and man; in England the former is considered merely as an ornamental plant, and is found in every flower-garden: *fenugreek*, esteemed for its medicinal virtues, and Astragalus tragacantha, *tragacanth vetch*, so named from the gum that it yields, are both natives of Provence and the vicinity of Montpellier. Many of our most ornamental shrubs belong to this class, such as Cytisus Laburnum, *great Laburnum;* Collutea arborescens, *bladder senna;* and Spartium junceum, *Spanish broom.*

Several succulent plants of the same natural class with the Sedum, are found on the dry rocks on the Spanish and Swiss frontiers; of which a few have been introduced into our gardens, viz. Sedum anacampseros and villosum, *ever-green orpine*, and *hairy sedum;* Sempervivum, globiferum, and arachnoideum, *hen and chicken sedum*, and *cobweb sedum.*

The class Pentandria of Linnæus contains several well-known plants that occur native in France, some of which have been introduced into our gardens and shrubberies; such are the *hairy primrose* and *auricula*, found wild on the mountains of Provence; *blue berried honey-suckle; rosebay oleander; great flowered campanula* and *Venus's looking-glass;* the *alaternus*, and *tamarisk*. Others of this class deserve notice for their use in various arts, and in medicine, as Pistachia terebinthus, *Chio turpentine-tree*, Pistachia lentiscus, *mastich-tree;* Rhamnus infectorius, the berries of which are used in dyeing by the name of *French berries* or *graines d'Avignon; alkanet*, another dyeing drug; *common* and *Venetian sumach*, the most powerful vegetable astringents, and largely applied to leather dressing and dyeing; Salsola soda, *glass wort*, a plant growing on the shore of the Mediterranean, from which the Barilla of commerce is prepared. Some esculent plants also belong to this class, which, if not strictly natives of France, have at least been long naturalized to the soil and climate; these are *carob tree; pistachia nut-tree*, and *jujube-tree.*

But few species of the French flora need be mentioned under the class Decandria Linn. The *fraxinella*; the *yellow* and *Narbonne flax;* the *sweet William* and *carnation;*

tion; the *ferruginous Rhododendron*, and *the Strawberry saxifrage*, are adopted into our flower-gardens: the *Rue*, and *Storax-tree*, the former a native, and the other naturalized at Hieres, are used in medicine.

Many of the most beautiful plants of the classes Polyandria and Icosandria are to be met with wild in France; such are *scarlet-horned poppy; common and narrow-leaved peony; feathered columbine; Christmas rose and winter aconite; Alpina anemone and hepatica; bee larkspur*, and *monkshood;* several trees and shrubs both ornamental and useful, also arrange themselves under one or other of these classes. The *broad-leaved myrtle*, grows with great luxuriance along the whole of the Mediterranean coast; the *Caper-bush*, the *laurel-leaved* and *Montpellier cistus*, three low shrubs of exquisite beauty, hang from the summits, or cluster round the sides of the low rocks about Toulon and Montpellier. In the same vicinity also are found the *Provence rose*, the *pyracantha*, and the *pomegranate tree.*

A few trees and shrubs remain to be mentioned, which will be more conveniently taken together than separated into their botanical classes; these are, the *greater and less prickly-cupped oak*, two very fine species that are found in plenty about Paris and Fontainbleau; the *kermes oak*, *cork-tree*, and *evergreen ilex*, growing chiefly in the southern provinces; the *savine*, the *brown and yellow berried juniper; broad-leaved phillyrea;* and *tree-heath;* all of them natives of Provence, Dauphiné, and Languedoc *.

Zoology.] The horses of France do not appear to have been celebrated at any period; and it is well known that the ancient monarchs were drawn to the national assemblies by oxen. Before the late commencement of hostilities, many English horses were imported for the coach and saddle. The best native horses are, for draught, those of Normandy; for the saddle, those of the Limosin, which have been recently improved by crossing the breed with the Arabian, Turkish, and English [16]. But the greater number of horses in France consists of Bidets, small animals of little shew, but great utility. The rich pastures of the north support numerous herds of cattle, yet an able judge [17] asserts, that there is not in the kingdom one-tenth part of what there ought to be; a radical error of French agriculture being the neglect of grass, and the consequent want of manure. The cattle of Limoges, and some other provinces, are of a beautiful cream colour. The beef at Paris, Mr. Young prefers to that of London. The sheep are ill managed, having in winter only straw, instead of green food as in England [18]. The consequences are poor fleeces, rarity of sheep, so that the poor are forced to eat bread only, and large quantities of wool are imported. Of ferocious animals the most remarkable are the wild boar and the wolf; the ibex, rock goat, or bouquetin, is found on the Pyrenees and the Alps, being a large goat with very long and strong horns. The chamois belongs to the class of antelopes, having small straight horns. Among the animals almost peculiar to France, may be mentioned the Vespertilio serotina, Pipistrilla, Barbastella, the Otis tetrax, the Chadrius lutreus, &c. †

Mine-

* To the French botany may be added the truffel, chiefly found in the Angoumois and Perigord, whence they are sent to supply epicurean tables. They are commonly found in a ferriginous soil, at the foot of the black oak; and it is said, that the truffel disappears if the tree be destroyed. There is also a resemblance between the taste of that wood, and that of the truffel. They are found by means of pigs, in the month of November. There is in Piedmont a superior sort, of a white colour, and which smells like garlick. *Walckenaer.*

[16] Young's France, ii. 55. [17] Young, ii. 52. [18] Young, i. 430.

† The castor, or beaver, is found in the isles of the Rhone, but is very different from that of America, being four times as large, and not constructing a hut, but digging a hole. The bear is found in Dauphiné and the Pyrenees; the latter also present the lynx, but rarely. Vipers abound in La Vendée; and,

MINERALOGY.] Gold mines anciently existed in the south of France, and some of the rivulets still roll down particles of that metal. The ancient Gallic coins are however of a base gold mingled with silver, being the metal styled by the ancients electrum. And such it is probable are the particles of gold which are found in the sands of the Rhone, between Tournon and Valance, and in those of the Ardeche [19]. France can, however, boast of the silver mines at St. Marie-aux-Mines in Alsace, and at Giromagny in the department of the Upper Rhine, near the mountains of Vosges, also a part of ancient Alsace. The same district contains mines of copper, a metal not unfrequent in the departments of the Alps, and those of the Loire, the Lozere, and the Ardéche *. Some appearances indicate tin in Bretagne, and even in the centre of France. Two-thirds of the lead of France are from Bretagne, particularly the mines of Poullaoven and Huelgoet; mines of lead also occur in the maritime Alps, and in the mountains of Vosges, in the departments of Lozere, Ardéche, &c. &c. Antimony occurs in the Ardeche, and in the department of the Allier, at Allemont in former Dauphiné, and in that of Mont Blanc, if that acquisition subsist. There are noted mines of calamine near Aix la Chapelle, if this may be considered as French territory. Manganese occurs in the department of the Loire, and in that of the Vosges; and at Romanecke, in the department of the Saone and Loire; it is also found near Perigou, whence it is used to be called pierre de Perigord: Cobalt is another product of Alsace. The new acquisitions in Savoy present some mercury; and there is a mine at Menildot †.

IRON.] Iron, that most important and universal of metals, is found in abundance, particularly in some of the northern departments. The iron mines of Framont, which afford beautiful specimens, are at the foot of Donon, the highest of the Vosges. In 1798 it was computed that there were 2000 furnaces, forges, &c. for the working of iron and steel [20].

COAL.] The coal mines of France were, at the same time, estimated at 400, constantly wrought; and 200 more capable of being wrought. Of these coal mines many occur in the provinces which formerly belonged to Flanders, and in the de-

in the summer 1804, a new and pernicious sort was said to have killed some people in the forest of Fontainbleau.

The best mutton is that of the Ardennes. In Languedoc there are travelling flocks of sheep like the Mesta of Spain. See *Walckenaer*, i. 190.

[19] Journ. des Mines, An. vi. p. 662. Many other rivers of France roll gold, as appears from a memoir of Reaumur. The gold mine of Gardette, in Dauphiné, is of little consequence. There is also a silver mine at Chalanches, near Allemont, in the same vicinity.

* The chief copper mines are those of Chesy and St. Bel. See Walck. i. 195. but the position which he assigns, is one of the numerous inaccuracies which are so much to be regretted in his work.

† The duchy of Deux Ponts, a valuable acquisition of France on the west of the Rhine, has long been celebrated for mines of quicksilver. The mountains of Vosges are chiefly horizontal strata of red sand-stone. Near Gelheim, to the west of Wurms, the chain is interrupted; but afterwards rising spreads in two branches, that to the west being called Westrich, that to the east Donnersberg. (Journal des Mines, No. 6. p. 70.) The mountains which contain the mercury embrace a district of 10 or 12 leagues in length, south to north, from Wolfstein to Cruznach, and seven or eight leagues in breadth, being of a reddish brown or grey sand-stone. In this territory, among numerous mines of quicksilver, are those of Stahlberg, and Donnersberg, which have been explored for many centuries. The gangart is steatite, barytes, argillaceous rock, &c. The adjacent part of the Palatinate also contains similar mines, particularly in the mountain of Potzberg near the river Glan, composed of a kind of substance like kaolin, of minute particles of quartz, mica, and clay. The pits in Potzberg are about forty. At Wolfstein are other mines of the same rare mineral. The annual product of these mines may be estimated at 67,200 pounds of mercury; and the revenue, after deducting expences, at 127,517 livres. Near Trarbach, at the extremity of the western branch of the Vosges, there are mines of copper and lead, with some silver. (Ib. xi. 43, &c.) About six miles to the south of Trarbach, the mountain Eckelsberg displays singular picturesque walls of quartz, running from east to west, the intermediate schistus being decayed. Many parts of the Hunzruck, or region between the Moselle and the Nahe, are covered with blocks of quartz.

[20] Journ. des Mines, Ann. vii. p. 171.

partments

partments of Boulogne, and Lamanche. Coal is also not unfrequent in the centre and south of France. Nearly allied to coal is jet, an article formerly of great consumption, chiefly in Spain, where it was made into rosaries, crosses, buttons for black dresses, &c.[21] France was from time immemorial in possession of this branch, which was centered in three villages in the department of the Aude, in the south-west of ancient Languedoc. In 1786 it employed more than 1,200 workmen; and the annual supply of the mineral was computed at a thousand quintals, or hundred weight. Besides exports to Germany, Italy, and the Levant, Spain imported these jet manufactures to the annual amount of 180,000 livres. Latterly jet was, in return, imported from the mines of Arragon in Spain, to supply this manufacture. That in the south of France is in beds like coal, but not continuous, and was sometimes rendered impure by a mixture of pyrites: it is commonly found in a kind of rusty earth, of an ash colour; and sometimes occurs in masses of the weight of 50lbs. about five or six fathom under the surface.

Besides excellent free-stone, the environs of Paris contain abundance of gypsum, which at Mont Martre is found curiously crystallized. Alum is found in considerable quantities at Aveyron. The Pyrenees in particular supply beautiful marbles; and the extensive and various territories of France afford several precious stones, as the aqua marina, the jacinth, the chrysolite, and even the sapphire.

Mineral Waters.] The chief mineral waters of France are those of Barrèges and Bagneres, in the Pyrenees, both resembling that of Bath, Forges, in Normandy, ferruginous, Vichi, Bourbonne, Balaruc, Plombieres *. The warm baths of Barrèges, in particular, at the foot of the Pyrenees, have been long celebrated, and there the Queen of Navarre lays the scene of her tales. The baths of Bagneres are in the same neighbourhood.

Natural Curiosities.] Among the natural curiosities of France, or those objects which, in an enlightened age, attract particular observation, may be named the singular mountains of Auvergne already mentioned, and which struck even Mr. Young as volcanic. The scenery here is however richly deserving of attention; and has escaped most travellers, who have pursued the dull route to Dijon, instead of this variegated road which may conduct them by Nismes, and Aix, into Italy. The fountain of Vaucluse, celebrated by Petrarca, is a river springing suddenly from a cavern at the bottom of a perpendicular rock. Nor must the noted plain of La Crau be forgotten, which lies in Provence, not far from the mouth of the Rhone. This is the most singular stony desart that is to be found in France, or perhaps in Europe[22]. The diameter is about five leagues, and the contents from 20 to 25 leagues square, or about 150,000 English acres. It is entirely composed of shingle, or round gravel, some of the stones as large as the head of a man, and the shingle of the sea-shore is not more barren of soil. Beneath is a small mixture of loam with fragments of stone. In the winter there are scattered piles of grass, which, from the vast extent of the space, pasture a considerable multitude of sheep. Mont St. Michael in Normandy is another natural curiosity, being a solitary hill rising near the sea, like St. Michael's mount in Cornwall. In general, however, France, being mostly a plain country, does not present much singularity of feature; and the scenes of the Cevennes and Pyrenees have been little explored by travellers, who passing to the chief cities generally see only the most uninteresting parts of the country. Even Bretagne, it is probable, may present many singularities, which may have escaped the attention of the French themselves, who do not appear to be much impressed with such objects.

[21] Journ. des Mines, Ann. iii. No. 4. p. 41.

* The deobstruent waters of Plombieres are called *Savonneuses* or soapy, by the French. They are impregnated with steatite or magnesia. There are also mineral waters at Mont Dor in Auvergne.

[22] Young, i. 379.

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They have, however, commemorated with some attention various natural caves, which in France, as in other countries, present themselves in calcareous rocks. One near the village of Beaume, about six leagues from Besançon, is remarkable from its containing a glacier; and it was fabulously reported that the ice increased during the summer, and diminished in the winter, till recent observations evinced, as was to be expected, the contrary position[23]. This cave is at the bottom of a small valley, in the midst of a thick forest. The mouth, which is level with the vale, is forty-five feet broad; and after a long and steep descent appears a hall of 100 feet high, whence there is apassage to the chamber containing the glacier, the descent to which is by a ladder of forty feet. In this triangular cavern are vast stalactites of solid ice, which are sometimes nearly joined by pillars of the same material, rising from a magnificent pedestal on the floor. While the thermometer of Reaumur, placed without, was at 20 degrees and a half, it here fell to one and three quarters. This phænomenon may be partly owing to the direction of the aperture of the cave, which fronts the north.

The noted wonders of Dauphinè comprise many Alpine scenes. In the department of Ardéche, on the other side of the Rhone, are several natural curiosities, such as the bridge of rock, under which the river Ardéche passes, near the village of Chames, the grottoes of Vallon, the gulph of Goule, with many singular basaltic columns, causies, &c. and what the French authors style craters of volcanoes[24]. The cataract of Gavarnie in the Pyrenees, is said to fall 1266 feet, being the highest in Europe.

FRENCH ISLES.—CORSICA.] The isles around France are so small, and unimportant, that they would scarcely be deserving of notice, were it not for events that have taken place during this war. The isle of Corsica must however, be excepted, if it continue to be regarded as a part of the French territory. From the dominion of Carthage, this isle passed under that of Rome, and was for some time subject to the Saracens of Africa. In the time of the Crusades it was assigned to the republic of Pisa, and was afterwards conquered by the Genoese. In 1736 the malcontents rejected the Genoese yoke, and chose a German adventurer for their king. After many ineffectual struggles Corsica was ceded to the French, who continue to maintain a dubious authority. The Romans did not certainly highly esteem this island, when they selected it as a place of exile; and according to a modern French geographer, "the air of Corsica is thick and unwholesome, the territory full of mountains, of little fertility, and ill cultivated: the vallies nevertheless produce corn, and the hills wine, fruits, and almonds[25]." This plain account seems preferable to the exaggerations of party writers in England, who swell the advantages of this island; but it is probable that, as they assert, small veins of silver may be found, and that the mountains may afford granite, porphyry, jasper, &c. which, however, abounds in the Highlands of Scotland*.

[23] Journ. des Mines, xxi. 65.

[24] Ibid. Ann. vi. p. 626. To these may be added the caves of Arcy, near Vermanton, in the former province of Burgundy, and other curious grottos on the river Cher, three leagues on the south-west of Tours. In the county of Foix, the junction of two mountains, forms a cavern, capable of containing 2000 men; nor among the natural curiosities should be forgotten the banks of shells in entire preservation, found in Burgundy, and at Grignon, not far from Versailles. See Faujas *Essai de géologie*, vol. i. Paris, 1803, 8vo. The stones which have recently fallen from the atmosphere, near Aigle, in Normandy, may also be ranged in this class. Like those of the same description, which have fallen in England, Italy, Germany, and Hindostan, they contain iron, silex, magnesia, and nickel, a composition before unknown on the globe. See Izarn's work, and the Italian publication dedicated to the Earl of Bristol. See also Cardan. *de Var. Rer.* who mentions a shower of 1200 stones which fell in Lombardy in 1510.

[25] La Croix, i. 528.

* Volney, in his View of the American States, informs us that, during the three months he resided in Corsica, there were 111 assassinations, arising from private revenge. He also indicates the chief cause of the want of civilization to be, that the land is mostly public property, and the fewness of private possessions. The first step ought to be, to divide the country into hereditary estates of a moderate size.

The isles called Heyeres, near Toulon, have been equally magnified by a female traveller. Mr. Young informs us, that they have a barren and naked appearance, and only present some melancholy pines[26]. They however contain some botanic riches, and may claim the fame of being Homer's isle of Calypso.

On the western coast first occurs the isle of Oleron, about fourteen miles long by two broad, celebrated for a code of maritime laws issued by Richard I. King of England, of whose French territory this isle constituted a portion. To the north is the Isle of Ré, opposite Rochelle, noted for an expedition of the English in the seventeenth century, described by Lord Herbert of Cherbury. Yeu is a small and insignificant isle, followed by Noirmoutier, which became remarkable in the war of La Vendeé, being about eight miles long and two in breadth. Belleisle has been repeatedly attacked by the English: it is about nine miles long and three broad, surrounded by steep rocks, which, with the fortifications, render the conquest difficult. The isle of Ushant, or Ouessant, is remarkable as the furthest headland of France, towards the west, being about twelve miles from the continent, and about nine in circumference, with several hamlets, and about 600 inhabitants. Several other small isles may be passed in silence, but those of St. Marcou, about seven miles south-east of La Hogue, may be mentioned as having been in our possession: they received their name, it is believed, from a Norman Saint, Marcoul, abbot of Nantouille, who died in 558.

[26] France, i. 195.

NETHERLANDS
NORTH SEA
ZEELAND
DUTCH BRABANT
DUCHY OF BRABANT
DUCHY OF LUXEMBURG
DUCHY OF GELDERS
DUCHY OF CLEVES
UPPER GELDERS
ELECTORATE OF COLOGNE
DUCHY OF JULIERS
PRINCIPALITY of STAVELO
FRENCH FLANDERS
FRENCH HAYNAU
CHAMPAGNE
LORRAIN
Breda
Bergen op Zoom
Middelburg
Flushing
Antwerp
Brussels
Louvain
Malines
Ghent
Bruges
Ostend
Ypres
Lille
Tournay
Valenciennes
Maubeuge
Mons
Charleroy
Namur
Dinant
Liege
Spa
Huy
Limburg
Verviers
Aix la Chapelle
Cologne
Juliers
Duysburg
Wesel
Arnhem
Nimeguen
Rurmonde
Venlo
Stephanswerd
Dusseldorf
Treves
Luxemburg
Sedan
Mezieres
Rocroy
Boulogne
Calais
Dunkirk
Gravelines
Furnes
Dixmude
Courtray
Menin
Commines
Armentieres
Bailleul
Cassel
Bergues
Namur
Huy
Dinant
Givet
Charlemont
Philippeville
Marienbourg
Avesnes
Landrecies
Quesnoy
Condé
St. Amant
Valenciennes
Bouchain
Cambray
Arleux
Douay
Orchies
Tournay
Ath
Leuze
Oudenarde
Audenarde
Tenremonde
Alost
Termonde
Dendermonde
Lier
Turnhout
Herentals
Antwerp
Breda
Bergen op Zoom
Tolen
Goes
Middelburg
Flushing
Sluys
Ardenburg
Bruges
Ostend
Nieuport
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Cologne
Juliers
Duysburg

NETHERLANDS.

Names. — Extent. — Original Population. — Historical Epochs. — Antiquities. — Religion. — Government. — Laws. — Population. — Revenue. — Political Importance and Relations. — Manners and Customs. — Language. — Literature. — Education. — Universities. — Cities and Towns. — Edifices. — Inland Navigation. — Manufactures and Commerce. — Climate and Seasons. — Face of the Country. — Soil and Agriculture. — Rivers. — Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

THOSE provinces of the Netherlands which were formerly subject to the house of Austria, have been recently annexed to the French dominions. As this fertile territory may probably continue to be united to France, it became necessary to use as much brevity as possible in the description, that it might not, in that case, be disproportionate to the account of that country.

NAMES.] The Netherlands in general were anciently known by the name of Belgic Gaul, the chief inhabitants of this part being the Menapii, the Tungri, the Nervii, and the Morini. After the irruption of the Franks, this country formed part of Neustria, or the new kingdom, (the ancient kingdom of the Franks being on the east of the Rhine,) partly belonging to the province of Flandria, and partly to that of Lotharingia, or Lower Lorrain[1]. In the middle of the ninth century arose the powerful house of the earls of Flanders; and the counts of Hainaut commence about the same epoch. The dukes of Lower Lorrain and Brabant are little known till the end of the tenth century. These and other great inheritances gradually fell under the power of the dukes of Burgundy, who, in the fifteenth century enjoyed dominions worthy of the regal title. With the heiress of Burgundy the Netherlands passed by marriage to the house of Austria.

EXTENT.] The length of the Austrian Netherlands, computed from the eastern limit of Luxemburgh to Ostend, on the ocean, may be about 180 British miles; and about 120 in breadth, from the northern boundary of Austrian Brabant to the most southern limit of Hainaut. The extent is computed at 7,520 square miles, with a population of 1,900,000. But if the French territory be extended to the Rhine, and thus include large portions of the German circles of Lower Rhine, and Westphalia, the territory and population may be increased by at least one third.

ORIGINAL POPULATION.] The original population was Celtic, but was supplanted by the Belgæ, a German colony, afterwards vanquished by the Franks, a kindred nation. The progressive geography may be traced with great certainty from

[1] D'Anville, Etats formès en Europe, 70, &c.

the time of Julius Cæsar through the later Roman writers, and the Francic historians of the middle ages. The chief historical epochs are,

1. The events while the Romans held Gaul.

2. Under the Merovingian race of French kings.

3. The ancient earls of Flanders, and Hainaut, and other potentates who shared these territories.

4. The dukes of Burgundy. During these two epochs the Netherlands became the great mart of commerce in the west of Europe, and were distinguished by opulence and the arts.

5. The Austrian domination, accompanied with repeated unsuccessful struggles for freedom. The seven United Provinces, having, however, established their liberty, the commerce, and prosperity of the southern regions quickly passed to their northern neighbours.

ANTIQUITIES.] The remains of Roman art are little memorable, and the chief antiquities consist in grand ecclesiastical and civil monuments of the middle ages, when these regions concentrated a great part of the wealth of Europe, and abounded in excellent artists of all descriptions.

RELIGION.] The religion of the Netherlands is the Roman Catholic; and till the French revolution, the inhabitants were noted for bigotry; a great part of the wealth being in the hands of ecclesiastics. The ancient cultivation of the arts had also a share in this attachment, the Catholic system being naturally endeared by this connexion, while the Reformation has chiefly succeeded in those northern regions where the progress of the arts had not yet captivated the affections of the people. The metropolitan see was the archbishoprick of Mechlin, or Malines. The bishopricks were those of Bruges, Antwerp, Ghent, &c., in number nine or ten. The government and laws had some features of what was formerly deemed freedom; but the decline of commerce having lessened the consequence of the cities and burgesses, this liberty became the monopoly of the nobles, and clergy, who often opposed the will of the sovereign, when exerted in the most beneficial manner for the good of the community. The *Joyeuse entreé* was the magna charta of the Netherlands, a constitutional bond of national privileges. Yet the aristocracy was mild, and the people in general more happy and contented, than they are likely to prove under the tyranny of freedom.

POPULATION.—REVENUE, &c.] The population being computed at 1,900,000, and the square extent at 7,520 miles, there will be 252 inhabitants to the square mile, while France yields only 174. Under the Austrian power, the revenue of the Netherlands scarcely defrayed the expences of government, and the various extortions of the French rulers cannot afford sufficient data to compute an equitable and lasting revenue. The political importance and relations of these provinces have been long immerged in those of the house of Austria. Their truest interest would have been to have entered into the Dutch confederacy, and thus have established on a broader basis a commercial power, which in strict alliance with England might have defied the encroachments of French ambition: nor must the difference of religion be considered as the chief obstacle to so desirable an event, but rather the narrow policy of the Dutch, who by prohibiting the navigation of the Scheld, and other acts of outrage, excited indelible enmity, where they ought to have secured lasting friendship. But commercial monopoly, which solely considers present gain, is of all others the most unfit spring of government, which ought to regard the advantage of distant posterity. In the present instance it led the Dutch to the annihilation of their own power and prosperity; while, if the commerce of the southern states had continued uninterrupted, mutual interests might have formed a broad basis of lasting security.

MANNERS AND CUSTOMS.—LANGUAGE.] The manners and customs of the Netherlands partake of those of their neighbours, the Dutch and French, the phlegm of the one being tempered by the vivacity of the other. The lower classes were fond of religious pageantry, and much addicted to the superstitious observances of the Catholic system. The Flemish language partakes of the German, and of the Dutch.

LITERATURE.] These provinces boast of early literature, after their conversion to christianity in the seventh century, in various chronicles, and lives of saints; but in modern times they have rarely produced writers of great talents. The native language remains uncultivated, and the chief authors have used the Latin or the French. Froissart was born at Valenciennes, in French Flanders; Philip de Comines at the town so called, about eight miles to the north of Lisle, and situated in the same division. Lipsius, a man of considerable erudition, was born near Brussels. But in general the Southern Netherlands are more eminent in artists; and the United Provinces in literary characters.

EDUCATION.—UNIVERSITIES.] The education was neglected as in most Catholic countries, where the Jesuits in vain attempted to bring it to a level with that of the Protestant states. The universities, which in no country are of equal importance with the schools, were, however, numerous, considering the extent of the country. Exclusive of Tournay (Dornick) which has been long subject to the French, there were others at Douay, and St. Omer, much frequented by the English Catholics; and one of still greater celebrity at Louvain, founded in 1425. The illustrious professors, commemorated with such applause by Guicciardini, nephew of the great historian, who published an ample description of the Netherlands in the sixteenth century, have been long since forgotten, as to posterity their studies have appeared neither amusing nor useful.

CITIES AND TOWNS.—BRUSSELS.] One of the chief offices of geography, in ancient and modern times, being to give a short descriptive catalogue of the chief cities and towns, in the regions described, these must not be wholly omitted even in this short abstract. The three chief cities in what were called the Austrian Netherlands, are Brussels, Ghent, and Antwerp. The capital city of Brussels still contains about 80,000 inhabitants, and is beautified by a noble square, one side of which is occupied with a vast guildhall; by numerous churches, and fountains. The park is also a noble square, and in general this city unites the magnificence of Paris with the cleanness of a Dutch town. It is situated on the small river Sen, or Senne, which runs into the Dyle and the Scheld. It is known as early as the tenth century, and in the fourteenth was surrounded with walls. The imperial palace, the wonted residence of the governor of the Netherlands, displays considerable taste and magnificence.

GHENT.] Ghent contains about 60,000 souls, and the circumference of the walls is computed at 15 miles, as it is built on a number of little islands formed by four rivers, and many canals, and includes gardens, and even fields. Some of the streets are large and well paved, but only a few churches now deserve attention.

ANTWERP.] The inhabitants of Antwerp are computed at 50,000, the sad remains of great population and prosperity. This city being placed upon the estuary of the Scheld, and formerly the chief mart of Flemish commerce, there is a strong citadel, erected by the sanguinary duke of Alva. The harbour is excellent, but the Dutch fort of Lillo commanded the approach: as to the supposed impediments, they are found to have been fabulous. The streets, houses, and churches, are worthy of the ancient fame of the city. The exchange is said to have afforded the pattern for that of London. The churches were decorated with many paintings by Rubens, Vandyke, and other Flemish masters: but now present only bare walls. In 1568 the trade is supposed to have been at its greatest height; and the number of inhabitants was computed at 200,000. It still contains a number of the rich descendants of the ancient merchants: with some com-

merce, and a few flourishing manufactures, particularly of lace and linen*. Of the other principal towns, Mons is computed at 25,000 inhabitants; Bruges, and Namur, each at 20,000; Luxembourg at 12,000; Roermond at 10,000; Limbourgh at 8,000.

SEA-PORTS.—OSTEND.] The sea-coast of Flanders, the maritime province, consists chiefly of sandy hills, and downs, and has few inlets, as most of the rivers flow into the Scheld. There are however two ports which deserve particular notice. The Sluys†, called by the French L'Ecluse, derives its name from the sluices, by which the circumjacent country may be laid under water. And a similar circumstance gives name to Helvöet Sluys, a sea-port of Holland, situated in the island of Vorn, about forty miles more to the north. Guicciardini says that the haven of Sluys was capable of containing 500 ships. The port and population now yield greatly to those of Ostend. This only other haven on the Flemish shore has been considerably frequented since the Scheld was abandoned. The town is still computed to contain 14,000 souls, though it suffered greatly by the famous siege which terminated in 1604, when it was gallantly defended by Sir Francis Vere, at the head of a few English troops. Many English families were settled here before Ostend fell a prey to the French.

EDIFICES.] In general it may be observed that, even at the present day, every traveller is impressed with surprize, not only at the number, but the great extent of the Flemish cities, towns, and even villages; in which respect the Netherlands exceed every country in Europe, only excepting the United Provinces. The chief edifices are the cathedrals, churches, and monasteries; though a few castles belonging to ancient families, or rich merchants, used to attract some notice: the taste of the latter buildings being faithfully copied in the Flemish landscapes, and more remarkable for little prettiness, peaked roofs, fantastic ornaments, the muddy moat, and drawbridge, than for grandeur of design, or amenity of situation.

INLAND NAVIGATION.] Idle would be the attempt even to enumerate the canals which intersect these provinces in all directions. Some of them date even from the tenth century, and the canal from Brussels to the Scheld is of the sixteenth. Other important canals extend from Ghent, Antwerp, Ostend, and other cities, and towns, especially in the western districts; but, under the Austrian domination, these important means of intercourse were shamefully neglected, and it will require much time and labour to restore them to their former utility[2].

MANUFACTURES AND COMMERCE.] The manufactures and commerce of the Netherlands, for a long period superior to any in the west of Europe, have suffered a radical and total decline, owing partly to the other powers entering into competition, and partly to the establishment of freedom in the United Provinces, whence Amsterdam arose upon the ruins of Antwerp‡. What little commerce remains is

* See D'Herbouville Statistique de Department des Deux Nethes. The Scheld at Antwerp is 2160 feet in breadth, and 30 feet deep at low water.

† Sluys belonged to the United Provinces, but is here mentioned, considering the Netherlands to the Rhine as an appendage of France. Nieuport, a little fishing town, scarcely deserves notice.

[2] Philips, 48.

‡ The author has been favoured by M. Vernimmen of Antwerp with a MS. memoir on the commerce of this city. In consequence of the treaty of Munster in 1648, it had become almost null, but began to revive when the Netherlands became a part of France. In the year 1800, 61 vessels arrived from Emden, Altona, and Hamburg. In 1801 there were 147 from the same ports, with some Americans. In 1802 there were 149; and the commercial connections began to be more extensive, for some were from the Baltic, the Mediterranean, and even from the West Indies; the chief imports being coffee, sugar, cotton, and cotton cloths, hides, dyeing woods, tea, indigo, &c. Next year the arrivals were 181; some from Spain. In 1804 there were 162, among which were many Americans. In 1805, previous to the 18th of July, there had arrived no less than 354, two being from Canton, and one from Batavia; the number of those under

is chiefly inland to Germany, the external employing very few native vessels. The East India Company established at Ostend was suppressed by the jealousy of England, and other powers; and the chief commerce was afterwards carried on by the English established in that city. Yet of the manufactures a few fragments remain: Cambray, long subject to the French, is still renowned for the cambrics which thence derived their name; as Tournay, or Dornick, was anciently famous for the finest linens. At Bruges there are still some manufactures of broad says, baize, and other woollens; considerable fabrics of broad-cloth, druggets, shalloons, and stockings, were conducted at St. Omers, chiefly with wool smuggled from England. But the chief manufactures are of tapestry, fine linen, and laces, at Mechlin, Brussels*, Ghent, Antwerp, Louvain, which still enrich the country around, and induce the farmers to cultivate flax, even on the poorest soils. The Netherlands produce, for home consumption, abundance of corn, and vegetables; and the coal mines would become important, if the operations were skilfully conducted. There is besides abundance of turf for fuel; with iron, porcelain, clay, and other commodities.

CLIMATE AND SEASONS, &c.] The climate of the Netherlands considerably resembles that of the south of England, and is more remarkable for moisture than for warmth; yet the duchy of Luxembourg produces some wine, which probably has the austerity of the Rhenish, without its spirit. The face of the country is in general level, and the semblance of hills can scarcely be discovered, except towards the east, where a few elevations relieve the eye from the general flatness of the other regions. The soil is in general rich sandy loam, sometimes interspersed with fields of clay, but more often with large spaces of sand. Such has been, even in distant ages, the state of agriculture that the Netherlands were long esteemed the very garden of Europe, a praise which they still share with Lombardy and England. No stronger proof can be adduced of the advantages, which commerce confers on agriculture, than this country, which evinces that the latter advantage chiefly arises from commercial opulence employed in its most useful direction. The mere farmer can never become opulent, except from the pre-existent benefits of trade; but while he is sharing in the national wealth thus acquired, it is natural that he should impute his success solely to his own labours. It must readily occur that Lombardy, also celebrated for its agriculture, was the country of the ancient bankers of Europe, who returned there to enjoy the fortunes which they had acquired; and that England is pre-eminent in mercantile wealth: so that the plain facts are worth a thousand theories. Accurate observers repeatedly praise the state of agriculture in the Netherlands, and point out many advantages which it maintained over that of England. The repeated crops of excellent clover, the cole, the turnips, the clean crops of flax, barley, and oats, deservedly attracted their attention. The agriculture has been celebrated for these 600 years, ever since their commerce and manufactures became eminent; and they still possess the essentials of good husbandry in the destruction of weeds, and perpetual crops. They commonly used four horses without a driver, the ploughman holding the reins, and being equipped with a long whip struck into a socket. The plough had wheels, and the furrows were shallow, as they did not wish to turn up the sharp and unmanured sand: on some low

under the Prussian flag was the greatest, and followed by the Americans. A report had been spread that the navigation of the Scheld was impeded, but was found to be fabulous; and a capital chart has recently been published by the French government, with numerous and exact soundings. A canal has been ordered which will join the Rhine, the Meuse, and the Scheld: new docks are constructing, together with a magnificent quay. On the north of the city is a grand dock yard, belonging to Messrs. Danet and Company.

When the author passed through Antwerp, in July 1805, nine ships of the line, from 74 to 110 guns, were upon the stocks, and expected to be finished in two years; the forests of Flanders affording a great and prompt supply of timber.

* We speak of Brussels carpets, but there never was a manufactory of that sort. Some carpets are made at Tournay.

spots,

spots, between little eminences, was seen abundance of hops, a native and peculiar product adopted in England in the reign of Henry VIII. They never allow the land to lie fallow, regarding the destruction of weeds as the sole advantage of such a practice, which may be equally accomplished by crops of turnips, rape, beans, and clover, which not only destroy the weeds but enrich the soil.

Rivers.] The Netherlands are watered by so many rivers and canals, that it will be sufficient to mention only a few of the chief streams. The Rhine belongs to Germany, passing at a considerable distance to the east of the frontier; and but a small extent of the Meuse, or Maas pervades the county of Namur, in these Netherlands. The chief river is the Scheld, which receives two other streams, the Lys, and the Scalpe, the latter near Mortagne, the former near Ghent. All these rivers arise in the county of Artois, from no considerable elevation; and the whole course of the Scheld, or French Escaut, cannot be comparatively estimated at above 120 miles*. The Dyle rises not far to the north-west of Namur, and joins the Scheld above Niel, after receiving from the east the Dermer, the Nette, or Nethe from the north, and the Senne from the south. Most of the other rivers yield in importance to the canals, and it would indeed be difficult in many instances to determine whether their course be the work of nature or art. There is no lake worthy of commemoration.

Mountains.—Forests.] Though there be little ridges of hills in the counties of Namur and Luxembourg, the traveller must proceed to the distant banks of the Rhine before he meets with any elevation that can deserve the name, even of a small mountain. There are, however, several woods even in the centre of Flanders; and in Brabant is the forest of Soigne. Further to the east and south are immense forests, which almost pervade Hainaut and Luxembourg, from Valenciennes to Treves, forming striking remains of the ancient forest of Ardennes.

Botany.] The vegetable productions of the Catholic Netherlands differ in no respect from those of Holland, and all the plants that are natives of this country may be met with in the sandy and marshy districts of the south-east coast of England, except the Gentiana cruciata. A few species indeed, which are rare with us, are of frequent occurrence in the Netherlands, particularly the *marsh ragwort*, in shallow ditches; *field eryngo*, in great plenty by the side of the roads; and the elegant *fringed water-lily*, adorning the canals, and other deep low streams†.

Zoology.] The zoology of the Netherlands affords no remarkable materials. The breed of horses and cattle is esteemed for size.

Mineralogy, &c.] So plain a country cannot be supposed to supply many minerals; yet coal, perhaps the most precious of them all, is found in several districts, and the ingenuity of the French has been exerted in an improvement of the operations. In the county of Namur are also found lead and copper; and Hainaut affords iron, and slate. From its iron works Luxembourg derives its chief wealth; and the forest of Ardennes is still renowned for the metal of war. Marble, and alabaster are also found in the eastern districts. There are no mineral waters of much reputation in the Netherlands; but in the neighbouring circle of Westphalia, are those of Aix la Chapelle, and still nearer those of the Spa, about 26 British miles south east of the former, and discovered towards the beginning of the 14th century.

Natural Curiosities.] The natural curiosities of so flat a country cannot be supposed to be numerous, nor have travellers indeed indicated any one object of this kind.

* The Scheld properly rises about eight miles north of St. Quintin, in the modern department of the Aisne.

† Necker, Deliciæ Gallo-Belgicæ.

From Arrowsmith's Map of Ruſsia in Europe.

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RUSSIA IN EUROPE.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names.—Extent.—Boundaries.—Original Population.—Progressive Geography, and present Boundaries.—Present Divisions.—Historical Epochs and Antiquities.

THE Russian empire is, perhaps, the most extensive that ever existed; the length being about 9200 English miles, and the breadth 2400[1]. But the oriental part presents vast desarts, and a slender population, as will appear in the division of this work appropriated to Asia. The present article must be restricted to an account of Russia in Europe.

By the final partition of Poland, this division now extends from the river Dniester to the Uralian mountains, that grand chain which naturally divides Europe from Asia, a length of about 1600 miles; and in breadth above 1000 English miles. The extent is computed at about 1,200,000 square miles.

NAMES.] Even the European part of the Russian empire embraces many ancient kingdoms and states; but the chief name, that of Russia, shall only be here considered. Amidst the grand conflux of nations towards the west, which attended the decline and fall of the Roman Empire, the Slavonic tribe of Rossi escaped the observation of history till the ninth century; and it is uncertain whether the term were native, or imported by the Scandinavian chiefs who founded the Russian monarchy[2]. In the sixteenth century, when Russia first attracted the observation of enlightened Europe, we find that the new appellation of *Muscovia* had unaccountably passed among foreigners from the capital to the kingdom, an impropriety which long maintained its ground, and has not even yet finally expired. It probably arose from the name of Russia having been imparted, with the epithets White, Red, &c. to distant provinces, one or two of which were subject to Poland; whence the vagueness of the appellation induced strangers to indicate the kingdom by the metropolis, a practice not unusual in the obscurity of the middle ages.

ORIGINAL POPULATION.] The grand population of the European part of the Russian empire is well known to be Slavonic. The Slavons form an extensive original race of mankind, radically distinct from the Goths on the one hand, who, as possessing

[1] Tooke's View of the Russ. Emp. 3 vols. 8vo. i. p. 6.

[2] Gibbon, x. 219.

the

the countries more to the west, must have preceded the Slavons in their passage from Asia into Europe; and equally distinguishable, in language, person, and manners, from the Tatars, and other nations on the east. They are the Sarmatæ of the ancients; and were ever remarkable for personal elegance and strength.

Progressive Geography.] To enter much into the progressive geography of the Russian empire, would be to write a history of its revolutions. Till the sixteenth century, this empire continued almost unknown to the rest of Europe, and its geography must be faintly traced in the Byzantine annals, particularly in the work of Constantine Porphyrogenitus on the administration of the Empire. Even at that period the Russians held the spacious province around Moscow; and though confined on the east, extended their power to the Baltic, and the vicinity of Prussia. Towards the south, the river Borysthenes conducted them to the Euxine sea. The capitals were Novagorod and Kiow; the former afterwards famous for its alliance with the Hanseatic league; the latter still memorable for its catacombs. The city of Julin, at the mouth of the Oder, was also remarkable for its trade and opulence in the eleventh century, being the mart of commerce between the Slavonic nations and the western regions of Europe; but that capital belonged to the western Slavons and was distant from the frontiers of Russia. The victories of the Tatars constrained the Russian princes to abandon Kiow about the middle of the twelfth century, and that city having been ruined by the Tatars in the thirteenth, Moscow became the seat of empire. The geography of Russia, in the middle ages, becomes not a little embarrassed from its repeated subdivision into small monarchies, which remained in a state of vassalage to the Tatars till the year 1462, when Russia emerged from this eclipse, and gradually acquired its present extent and power. Not to detail the successive addition of province to province, and kingdom to kingdom, it must, however, be remembered that a great founder of the Russian power was Ivan IV. who reigned from the year 1534 to 1584, and subdued the Tatar kingdom of Astracan, and some provinces on the north-west. His successor Feodor I. turned his arms towards Siberia, a country which has been however most slowly investigated, and indeed scarcely known till the year 1730. In modern times, Russia has gradually extended her limits at the expence of the Turks; and the addition of an ample third of Poland, has afforded her a source still more stable and fertile of men and power.

Divisions.] No country in Europe has undergone so many alterations in regard to its politico-geographical division as Russia. Peter I. divided the empire into eight governments. In the year 1763, when Catherine II. began a great reformation in the colleges of the empire and the provincial chanceries, they had increased, without any considerable addition of foreign territory, to eighteen. In the two following years this number was increased by two; and in 1773, by the first division of Poland, two more were added. The empire consisted of these twenty-two governments when stadholderships or viceroyalties (*statthalter-schaften*) were introduced in the year 1776. Before the establishment of them was fully completed (which required ten years), Russia was enlarged by the accession of the Crimea. Of these twenty-three provinces, forty-two stadholderships were formed, and this division existed nine years, that is from 1786 to 1794. In the years 1795 and 1796 their number, by new conquests on the Dniester and in Poland, and by the subjection of Courland, was increased to fifty. The establishment of these eight new governments changed the political geography in the whole of the southern and in part of the western districts of Russia; as whole circles * were taken from the old governments and others added to them in their stead. But scarcely had these extensive alterations been made, when, in

* Every government is divided into a certain number of circles.

the year 1796, the whole of the political division hitherto established was changed, and the fifty governments reduced to forty-one. Other alterations were afterwards made; but on the accession of the present emperor Alexander I. he thought proper to revive most of those governments which had been abolished under the reign of his predecessor. An ukase for this purpose appeared in the month of September 1801, in consequence of which the forty-one existing governments were increased by five, which had all before existed; afterwards three were added, which with Grusia made the number again fifty. The following table will give a comparative view of all these changes.

	Governments under	
Alexander, 1803.	Catherine, 1796.	Paul, 1800.
1. Moskva.	1. Moskva.	1. Moskva.
2. St. Petersburg.	2. St. Petersburg.	2. St. Petersburg.
3. Novogorod.	3. Novogorod. }	3. Novogorod.
4 Olonetz.	4. Olonetz. }	4. Archangel.
5. Archangel.	5. Archangel. }	
6. Pskove.	6. Pskove.	5. Pskove.
7. Smolensk.	7. Smolensk.	6. Smolensk.
8. Tula.	8. Tula.	7. Tula.
9. Twer.	9. Twer.	8. Twer.
10. Kaluga.	10. Kaluga.	9. Kaluga.
11. Jaroslaf.	11. Jaroslaf.	10. Jaroslaf.
12. Kostroma.	12. Kostroma.	11. Kostroma.
13. Vludimir.	13. Vludimir.	12. Vludimir.
14. Vologda.	14. Vologda.	13. Vologda.
15. Nisneygorod	15. Nishnegorod.	14. Nisneygorod.
16. Wiutka.	16. Wiutka.	15. Wiutka.
17. Kasan.	17. Kasan.	16. Kasan.
18. Perm.	18. Perm.	17. Perm.
19. Tobolsk.	19. Tobolsk. }	18. Tobolsk.
20. Tomsk.	20. Kolywan. }	
21. Irkutsk.	21. Irkutsk.	19. Irkutsk.
22. Orenburg.	22. Ufa.	20. Orenburg.
23. Simbirsk.	23. Simbirsk.	21. Simbirsk.
24. Penza.	24. Penza. }	22. (Penza) Saratof.
25. Saratof.	25. Saratof. }	
26. Astrakan. }	26. Caucasus.	23. Astrakan.
27. Caucasus. }		
28. Voronish.	27. Voronish.	24. Voronish.
29. Tambof.	28. Tambof.	25. Tambof.
30. Râzan.	29. Râzan.	26. Râzan.
31. Kursk.	30. Kursk.	27. Kursk.
32. Orel.	31. Orel.	28. Orel.
33. The Slobodish Ukrain.	32. Churkof.	29. Slobodish Ukrain.
34. Ekaterinaslaf.	33. Ekaterinaslaf. }	
35. Tauria	34. Tanria. }	30. New Russia.
36. Cherson (Nikolayef.)	35. Vosnesensk. }	
37. Poltowa.	36. Novogorod—Seversk. }	31. Lesser Russia.
38. Tschernigof.	37. Tschernigof. }	
39. Kief.	38. Kief.	32. Kief.
40. Podolia.	39. Podolia. }	33. Podolia.
41. Volhynia.	40. Bratzlaf. }	34. Volhynia.
	41. Volhynia. }	
42. Grodno.	42. Stonim. }	35. Lithuania.
43. Vilna.	43. Vilna. }	
44. Vitebsk.	44. Polotsk }	36. White Russia.
45. Mogilef.	45. Mogilef. }	
46. Minsk.	46. Minsk.	37. Minsk.
47. Courland.	47. Courland.	38. Courland.

Alexander, 1803.	Catherine, 1796.	Paul, 1800.
48. Livonia.	48. Riza.	39. Livonia.
49. Esthonia.	49. Rival.	40. Esthonia.
50. Finland.	50. Wiborg.	41. Wiborg.
51. Grusia.		

*

Historical Epochs.] The following appear to be the chief historical epochs of this mighty empire.

1. The foundation of the kingdom by Ruric, a Scandinavian chief, A. D. 862. His descendants held the sceptre above 700 years.

2. The naval expeditions of the Russians against Constantinople, in the tenth century.

3. In the same century the baptism of Olga the queen, and the subsequent conversion of the Russians to Christianity.

4. The invasion of the Tatars under Batu Khan n 1236, and the subsequent vassalage of Russia.

5. The abolition of the power of the Tatars by Ivan III. who died in 1505.

6. The reign of Ivan IV. surnamed Basilowitz, known to western historians by the style of the tyrant John Basilides.

7. The death of the Czar Feodor in 1598, with whom expired the long progeny of Ruric. Several impostors afterwards appeared, under the name of Demetrius, the murdered brother of this sovereign.

8. The accession of the dynasty of Romanow 1613, in the person of Michael Feodorowitz, sprung in the female line from Ivan IV. He was followed by his son Alexis, father of Peter the Great.

9. The reign of Peter I. has been justly considered as a most important epoch in Russian history; but on reading the annals of the preceding reigns from that of Ivan IV. it will be perceived that a part of our admiration for Peter arises from our inattention to his predecessors; and that the light which he diffused was far from being so sudden and grand as is commonly imagined.

10. The late reign of Catherine II. deserves to be commemorated among the most brilliant epochs in the Russian annals; nor must her personal crimes exclude her from the list of great and able sovereigns.

Antiquities.] Of ancient monuments Russia cannot be supposed to afford great variety. Sometimes the tombs of their Pagan ancestors are discovered, containing weapons and ornaments. We learn from Herodotus that the Scythians regarded the tombs of their princes with singular veneration; and the Sarmatians or Slavons seem to have imbibed the same ideas. The catacombs at Kiow were perhaps formed in the Pagan period, though they be now replete with marks of Christianity. They are labyrinths of considerable extent, dug, as would appear, through a mass of hardened clay, but they do not seem to contain the bodies of the monarchs [3].

The idols of Pagan Russia are sometimes found cast in bronze; and Dr. Guthrie of Petersburg has given an ingenious account of the Slavonic mythology [4]. The chief god, Peroun, was supposed the author of thunder; Voloss resembled Pan; Swetovid was the Sun or Apollo; Silnoy Bog, or the strong god, was Hercules; Leda resembles Mars, &c. Many divinities presided over love, such as Lada or Venus; Lelio or Cupid, and his brother Dido, who, like the Anteros of the Greeks counteracted the power of Cupid. Radagast was the god who protected towns. The Russians had also goddesses corresponding with Ceres, Diana, and Pomona; and their Roussalki were nymphs of the woods and waters. The Pagan Russians also worshipped Znitch

* From Russland unter Alexander dem Ersten, by H. Storck, Petersburg, 1804.

[3] Herbin. Cryptæ Kijovienses. [4] Dissertations sur les Antiquités de Russie, 1795. 8vo.

or

or Vesta, in the form of fire; and venerated waters, the Bog or Hypanis being as highly regarded as the Ganges among the Indians: the Don and the Danube were also holy streams; and there was a sacred lake, environed with a thick forest, in the isle of Rugen, which was adored by the Slavonic tribes.

The conversion of the Russians must of course have been followed by the erection of many churches; but as Byzantine or Italian architects were employed, those edifices have but few peculiarities. Perhaps no country of considerable extent can afford fewer monuments of ancient art than Russia.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE religion of Russia is that of the Greek church, of which, since the fall of the Byzantine empire, this state may be considered as the chief source and power. The creed and ceremonies of the Greek church vary considerably from the Roman, and often in such minute circumstances that a detail would become tedious: the Greeks believe in the procession of the Holy Ghost from the Father alone, while the Roman orthodoxy includes the Son in the mystery. In pomp the Grecian ceremonies do not yield to the Roman catholic; but while the Greeks admit pictures into their churches, they reject images with abhorrence.

ECCLESIASTIC GEOGRAPHY.] The chief patriarch of the Russian church had usurped extraordinary powers, to the great injury of the imperial prerogative; but the spirit of Peter I. broke these ignominious bonds, and the patriarchs have since become complaisant instruments of the court. The clergy are very numerous, and have several privileges, particularly exemption from taxes. They have been computed at 67,000, secular and regular. The Greek religion permits the marriage of the secular clergy. The cathedrals and parish churches in the empire are computed at 18,350; the monasteries at 480; nunneries 74: monks supposed to be 7,300, nuns 3,000. The monasteries have not been such favourite resorts since Peter I. and Catherine II. opened the sources of industry. The bishoprics amount to about 30.

GOVERNTMENT.] The government of Russia appears to have been always despotic, there being no legislative power distinct from that of the sovereign. What is called the senate is only the supreme court of judicature. In 1606 the Czar Basil pretended to a free election by the senate or people; but his coronation was produced by intrigues among the chiefs; and there appears no vestige in Russian history of any national council or parliament, or estates of the empire, far less of a free elective diet, like that of Poland, another Slavonic nation, which a false semblance of liberty led to destruction, while the slavery of Russia produced gradual aggrandizement. Nothing indeed can be more opposite to any theories of government, influence of climate, national character, &c. than the contrast between Russia and Poland. In Russia there is an uniformity of subjection, which at least blends the nation in one united mass, while in Poland the nobles alone were free, and the king and the people alike slaves; but the Polish nobles were strangers to the grand maxim that the slavery or destruction of the nobility must soon follow that of the people. This vast empire is divided into about 40 governments, or vice-royalties, of which 34 may be assigned to the European part. The whole frame of the government may be pronounced to be military; and nobility itself is only virtually estimated by rank in the army.

In the time of the Tzar Alexei Michailowitsch, there was established in Russia a tribunal called the Chancery of Secret Inquisition; but during the peaceable and mild reign of that Prince it was merely a nominal institution. Peter the Great, in consequence of the many secret, as well as open conspiracies, which were formed against him,

him, on account of the numerous innovations made by him in the government, found it necessary not only to maintain this tribunal but also to render it much more active and severe. His successors, who were in turns raised to the throne, and precipitated from it by political convulsions, trusted to this formidable tribunal for a security which they did not find. Peter III., milder and more humane than most of his predecessors, abolished the private inquisition entirely; but he did not live long enough to insure the stability of this measure. Catherine II., whose principles, as is well known, were hostile to the spirit of such institutions, confirmed at first the abolishment of this tribunal; but in the latter part of her reign it was revived under her own immediate inspection, and continued to exist till it was finally abolished by the present Emperor Alexander, in the year 1801, soon after his accession.

THE SENATE.] By an Ukase, issued by the present Emperor Alexander, in the month of June, 1801,

The place of Senator is declared to be the highest in the kingdom. All other places are inferior to it. As the guardian of the laws, the Senate watches over the general execution of them; has a vigilant eye to the collecting of the public duties; provides means for relieving the necessities of the people; for maintaining public peace and tranquillity, and for preventing all proceedings contrary to law in all the inferior departments. It has the revision of all affairs both civil and criminal.

The power of the Senate is limited by no power but that of his Imperial Majesty.

His Imperial Majesty is sole president of the Senate. The Ukases of the Senate must be obeyed by every person in the same manner as the Ukases (cabinet orders) of his Imperial Majesty. The effect of them can be stopped only by an Ukase of the Monarch.

The Ukases of his Majesty, except those which require particular secrecy, must, by all departments and individuals to whom they are addressed, be transmitted to the Senate.

All the colleges, heads of governments, and courts of justice, immediately dependent on the Senate, must, in all doubtful and difficult cases, present a report to the Senate for its deliberation.

Every Senator is bound, when any thing takes place prejudicial to the interests of the kingdom or contrary to the laws, to give notice of it to the Senate.

When a Senator is guilty of any breach of duty, in that quality, he can be tried only by a general assembly of the Senate.

In the general assembly of the Senate all questions are decided by a majority of voices, which must consist of two-thirds of the whole. In the departments, however, questions must be determined by an unanimity of voices.

All civil and criminal affairs which have been discussed in the Senate, must be published every month in the Gazettes.

From the decisions of the Senate there is no appeal.

TORTURE ABOLISHED.] Catherine II. abolished torture so far that it could not be applied without the knowledge of government; but it was entirely abolished by an Ukase sent to the Senate on the 27th of September, 1801 *.

LAWS.] Immediately on the fall of the Roman empire, we find the Gothic tribes sedulously collecting and publishing their peculiar codes of laws; but it would be difficult to discover any Slavonic code till the sixteenth century; when they emanated, not from the national council, but from the arbitrary will of the monarch. Even in Poland, a country more early civilized than Russia, the first appearance of laws is in a few edicts of Casimir the Great in the fifteenth century; nor is there any

* From Russland unter Alexander dem Ersten, by H. Storck, Petersburg, 1804.

semblance of a code more ancient than the middle of the sixteenth. This singular defect may perhaps contribute to account for the fates of the Slavonic nations; and even the pretended Polish liberty of electing the monarch had not existed above 300 years. The first Russian code dates from the reign of Ivan IV.; and the late Empress had the merit of drawing up a new code with her own hands.

POPULATION.] The population of Russia is so diffuse, and spread over so wide an extent of territory, that very opposite opinions have been entertained concerning it. By most writers it was only estimated as equal to that of France, or about 25,000,000: and it was at the same time supposed that the recent acquisitions in Poland might add 5,000,000 to the amount. But in a late publication[5], Mr. William Tooke, who has long resided in Russia, and appears to be intimately acquainted with the original documents concerning that empire, has given new elucidations of this important subject, which considerably swell the sum of the inhabitants. He observes that, in order to collect the capitation tax, enumerations of the people have been made at intervals of twenty years since 1723. On the first enumeration, the persons subject to the tax were stated at 5,794,928: this number was always upon the increase; and in 1763 was supposed to yield data for the computation of 20,000,000, as the total population of the empire. But in 1783, more exact estimates were prepared; and in the 41 vice-royalties, then composing the empire, the state of male inhabitants * was as follows:

Merchants	107,408
Burghers	293,793
Odnodvortzi, and free countrymen	773,656
Exempt from taxes	310,830
Crown boors	4,674,603
Private boors	6,678,239
	12,838,529

The number of females being supposed to equal that of the males, a population would arise of 25,677,000. The most important accession to the Russian population arises from the partitions of Poland, which with small acquisitions from the Porte have been thus stated[6]:

At the first partition of Poland in 1773	1,226,966
From the Porte in the years 1774 and 1783	171,610
From the Porte in the year 1791	42,708
At the second partition of Poland 1793	3,745,663
By the subjection of Courland	387,922
At the third partition of Poland 1795	1,407,402
	6,982,271

Mr. Tooke afterwards proceeds to give the following account, drawn up, as he assures us, with the greatest nicety of examination, and presenting the whole population of the empire in 1799:

[5] View of the Russ. Emp. ii. 124.
* Even male babes are included in the capitation tax, under the denomination of their parents.
[6] Tooke, i. 327.

"By the revision of 1783 there were in the said 41 governments, computing the female sex as equal to the male, of registered persons	25,677,000
"The amount of the Kozaks of the Don and the Euxine, according to themost authentic private accounts at least - - - - - -	220,000
"For the unnumbered tribes and classes, at the time of the fourth revision, we cannot without the highest improbability allow less than -	1,500,000
"Consequently the Russian empire in the year 1783, might have inhabitants amounting altogether to - - - - - - - - -	27,397,000
"According to the results deduced from experiments and observations on the fruitfulness and mortality in Russia, this mass must of itself have increased annually more than half a million. If, in order to keep as far as possible from all exaggeration we deduct the half of this surplus of births, to allow for the diminution it may have suffered by an extraordinary mortality, as by war; there remains by every year an increase of 25,000 new citizens, which, exclusively of all ascending proportion, in 12 years makes a sum total of - - - - - - - - -	3,000,000
"The new acquisitions since the year 1783, or the present nine viceroyalties of Taurida, Minsk, Bratzlau, Vosnesensk, Podolia, Volhynia, Courland, Vilna, and Slonim, contain according to a legitimated statement already mentioned - - - - - - - - - -	5,755,000
"Consequently we may admit, by the most moderate estimate, the population of the Russian empire at present to be - - - - -	36,152,000
"Or in a round sum thirty-six millions of persons."	

Of this population Mr. Tooke assigns only about three millions and a half to Siberia, or Asiatic Russia, which contains the five governments of Perm, Ufa, Kolhyvan, Tobolsk, and Irkutsk; but Perm is itself situated on the European side of the Uralian mountains, so that we might perhaps allow even 33,000,000 for the population of European Russia.

CONDITION OF THE PEASANTS.] The Russian peasants are the serfs or slaves of their masters*. But in general each proprietor agrees to receive from each vassal a certain sum annually, called obrok, and then he may go where he pleases and labour for himself and his family. For this purpose he is furnished with a pass, and leaving his village he repairs to some town or city, even as far as Livonia or Esthonia, where he works the whole summer, as a carpenter, ditcher, &c. and gains as much as is sufficient to support himself and family during the winter months, and also to pay his obrok.

Those who remain at home employ themselves in agriculture and other rural occupations. In winter they apply to weaving and other branches of manufacture.

A proprietor never cares where his vassals go provided they are furnished with a pass and pay him the obrok or tax imposed upon them. The Russians are too much attached to their country and religion to ever think of emigrating; and the peasants even when they are obliged by bad treatment or other causes to change their master or place of abode, choose rather to unite themselves to the Cossacs of the Don than to pass the boundaries of the empire. Desertion even to other countries is very uncommon among the soldiers.

Each boor, according to his condition and expertness, must pay to his master five, ten, or more rubles annually. The crown peasants therefore, who pay only three rubles, consider themselves as very fortunate. Estates properly are villages, called Derewni, and the property of a nobleman is estimated according to the size of the village

* Some of the nobility in Russia have begun lately to give freedom to their slaves.

and

and the number of men it contains. But very often one village belongs to several noblemen or proprietors; and then it is said such a person possesses 50, another 100, a third 150, &c. souls, under which appellation males are always understood. The value of slaves varies with that of provisions. In 1747 Lerch purchased two men at Mosco and two horses for 60 rubles; and this he considered as dear. At present (1797) a healthy strong man is worth 300, 400, and even more rubles; a female from 100 to 150 and 200. In the bank belonging to government for lending money, a slave is taken in pawn for 40 rubles.

If a man therefore be considered as a real capital, it follows that the interest or obrok is not always determined according to the value of the man, but according to his talents or the nature of the occupation which he follows, and which enables him to gain a greater or less sum annually. If a slave carries on trade he is able to gain more; and therefore he must very often pay to his master a larger obrok than if he were merely a carpenter or tile-maker.

Besides the obrok, all boors, whether belonging to the crown or to private persons, must pay also a poll-tax or head-money, which at present (1797) in some places amounts to a ruble for a man *.

Colonsits.] It is well known that great encouragement has been given to foreigners to settle in Russia, and that there are in that country at present some colonies pretty numerous. The following table will exhibit a state of them as they were in 1803.

		Males.	Females.
Saratof.	Colonists in general -	19,800	18,925
	Evangelic Brethren, called the Brotherhood of Sarepta - -	253	254
New Russia.	Menonists - -	869	812
	Colonists of Josephsthal -	195	180
	——— of Yamburgi -	108	131
	Swedish - - -	78	79
	Dantzickers - -	65	61
	Swabians - -	46	44
	Bulgarians and Greeks -	396	370
Lesser Russia.	Colonists - - -	639	588
	Menonists - -	99	103
Voronish.	——— - -	211	173
Livonia.	——— - -	265	301
St. Petersburg.	Srednerogatski - -	105	100
	Ishori - - -	126	117
	Novo-Saratof - -	276	267
	Yamburgi - -	98	70
	Total - -	23,629	22,575

Hence it appears that in 1803 there were established in different parts of Russia 46,204 colonists of both sexes. It appears also from authentic documents, that government had expended in supporting the colonists the sum of 6,008,948 dollars, of which at that time it had received back only 1,957,490 dollars.

* Russland's Handel landwirthschaftlicke Kultur und Producte von W. C. Friebe. Petersburg, 3 vols. 1796, &c

It

It appears farther, that in 1803 the following number of colonists were established in Russia:—

	Males.	Females.
Bulgarians and Greeks -	213	216
Elbing and Maurunburg Menonists	534	521
Germans - - -	628	529
Swiss - - -	240 of both sexes.	
Swiss at Grodno - -	47	33
Prussians - -	14	12

Besides the sums advanced for these colonists before their arrival, government expended on their account, after their arrival in Russia, upwards of 70,000 rubles*.

Colonies.—Army.] Russia being a state new in maritime affairs, cannot boast of any colonies, nor can this name be applied to a small establishment or two in the eastern parts of Siberia. But on the Russian armies a great part of the fate of Europe and Asia must depend, and the subject of course deserves particular attention. Mr. Tooke estimates the whole amount of the Russian troops at 600,000; of which 500,000 may be esteemed effective. But it is supposed that not less than 150,000 are necessary in the garrisons, scattered over this vast and heterogeneous empire, so that if Russia sent forth her whole military force, it would hardly exceed 350,000, of which about 30,000 might be Cozaks. The Russian troops are remarkable for a kind of steady fanaticism, which renders their retreat almost impossible; but they are more accustomed to open and direct combat, than to the grand manœuvres of war. In weight and consistence they somewhat resemble the Spartan phalanx, which was forced to yield to the superior agility and rapidity of the Roman legion†.

Navy.] The Russian navy consists of seven detached fleets, employed in the remote seas on which the empire borders at different extremities. The chief fleet is of course that of the Baltic, which consists of about 36 ships of the line. That in the Euxine, or Black sea, at the harbours of Sevastopol, and Kherson, was computed at 12 ships of the line, but not of a high rate, as the Euxine affords no great depth of water; but there are many frigates, gallies, chebecks, and gun-boats. The fleet of gallies in the Baltic, in 1789, was estimated at 110. The Russians are rather averse to a sea-faring life; and there is scarcely any prospect of this empire ever becoming a great maritime power.

Revenues.] The revenues of Russia are supposed to amount to about 50,000,000 of rubles; which, valuing the ruble at four shillings, will be equal to 10,000,000l. sterling. The national debt is supposed to amount to little or nothing.

Political Importance, &c.] With all these advantages it is no wonder that the political importance, and relations of Russia are so preponderant in Europe, and Asia. In Europe her recent acquisitions have contributed to render her more and more formidable. It is fortunate that the powerful dominions, of Prussia, and Austria, are interposed between Russia and the German empire, else the liberties of Europe would be endangered, and perhaps totally crushed, by a new flood of barbarians issuing from the same sources with those which formerly deluged the civilized world. If the Russian

* Russland's Handel Landwirthshaftlicke Kultur und Producte, von W. C. Friebe, Petersburg, 1797, &c.

† After long and mature consideration the author is convinced that the German authors pensioned by the court of Petersburg, and who are followed by Mr. Tooke, have greatly exaggerated the population and military power of Russia. The real exertions of a state best display its practical force; and those of Russia under Alexander fell far short of expectation. The armies she can detach can scarcely be estimated at above eighty thousand effective troops; and far from coping with France she could never have encountered Austria with any view of success.

empire be not divided, there is room to predict that another Macedon will subdue another Greece. Poland has been devoured; Denmark and Sweden may be considered as subject-allies; and if the whole force of Russia were bent against either Austria or Prussia, it is hardly to be conceived that the shock could be withstood. It would certainly be for the interest of Europe that the Russian force should be diverted towards Asia, that by extending her dominions in that quarter her strength may be still more dispersed, when probably a division of the empire would commence, to the lasting advantage of the other continental powers. As the Greek religion prevails among the Christians of Greece, and Asia, Russia would in them find more faithful subjects, than among the catholics and protestants of Europe*.

* Finland, if suffered to remain, would form a valuable acquisition to Russia, especially as delivering the capital from the constant menaces of Sweden.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] AS the Russian empire comprizes so many distinct races of men, the manners of course must be very various. But in the European division, to which this brief account is restricted, the grand distinctions are, a few Laplanders on the east of the mountains of Olonetz, which divide Russia from Sweden; the Samoieds beyond the river Mezen; the Fins of the White sea, and the Baltic, with some remains of the same people towards the Uralian mountains; the grand Slavonic mass in the centre, including the Cozaks of the South who are also Slavons; and a few Tatars in Taurida, a beautiful region, which forms the south-east extremity of Europe. The Laplanders are well known to be a diminutive race, who would be amiable from the pastoral simplicity of their manners, were not their persons ugly, and disfigured with physical impurity. The Fins are also rather short in stature, with flat faces, deep cheeks, dark grey eyes, a thin beard, tawney hair, and a sallow complexion; but the southern Fins, though they retain the national features, are of superior appearance. There is a small district in the northern extremity of Scandinavia, idly called Finmark; but the chief region of the Fins is around the gulph of Finland, and thence on the south of the White sea, where was in ancient times the celebrated region of Permia, by the Scandinavian writers called Biarmia, which some suppose extended from the White sea to the mountains of Ural. Permia is mentioned in the account drawn up by Ohter for the use of Alfred the Great: and a fabulous detail is given of its wealth, particularly the rich temple of Yummala, the chief god of the Fins, decorated with a profusion of gold and jewels. Mr. Tooke[1] assures us that the ruins of ancient towns remain to evidence the civilization and prosperity of this people; and he supposes that the Permians traded with Persia, and India, by the Caspia sea, the rivers Volga and Kama, and that the mart was Tscherdyn, an old commercial town on the river Kolva. The repeated incursions of the Scandinavian pirates drove the Fins further to the south; and modern Perm is about 700 miles from the sea. The Fins used to excel in fishing and the chace; but they are now much blended with the Slavons, and have generally adopted their manners and customs.

The manners of the Slavonic Russians, who constitute the chief mass and soul of this empire, have been well described by Dr. Guthrie, and Mr. Tooke. They are generally middle-sized and vigorous: the tallness, and grace of the Polish Slavons seem to arise from superior climate, and soil. The general physiognomy consists of a small mouth, thin lips, white teeth, small eyes, a low forehead, the nose commonly small, and turned upwards, beard very bushy, hair generally reddish[2]. The expression of the countenance is gravity, with good nature, or sagacity; the gait and gestures lively and impassioned. The women destroy their naturally fine complexion with paint, and their personal charms expire at an early age. The Russian is extremely

[1] Tooke, i. 528. [2] Tooke, ii. 253.

patient of hunger and thirst; and his cure for all diseases is the warm bath, or rather vapour bath, in which the heat is above 32° of Reamur, which contributes greatly to health, and is supposed to be the only cause why that shocking disease, the Plica Polonica, has never appeared in Russia. Dr. Guthrie has shewn that the Russians retain manners and customs derived from their Pagan ancestors, and has given some curious specimens of their songs and music, which seem to be very pleasing. He has also compared their dances with those of the Greeks; and finds in one of them a considerable resemblance of the wanton Ionic, while another resembles the Pyrrhic. He observes that the country girls dress in the *saraphan*, resembling the ancient *stola*, and bind up their hair with the *lenta* a ribbon like the ancient *vitta*. They tinge their cheeks with the juice of the *echium Italicum*. When a marriage is proposed, the lover, accompanied by a friend goes to the house of the bride, and says to her mother, "shew us your merchandise; we have got money:" an expression which is thought to refer to the ancient custom of buying a wife. The other ceremonies are equally curious, but cannot be detailed in this abstract. The Russians shew great attention to their nurses, and are so hospitable that they offer to every stranger the *Khleb da sol*, or bread and salt, the symbol of food, lodging, and protection. At a repast, some salt fish, or ham, and a glass of brandy, are presented in the first place; and after dinner cakes made with honey are usually served; the common drink is kvass, an acid, thin, malt liquor: the houses are ornamented with stoves, and, among the rich, by flues conducted into every room, which is at the same time guarded with double windows. Fires are also employed with profusion to obviate the severity of winter in the northern provinces; but at Petersburg the air is so pure that there is no occasion to paint the iron chains in the streets, as they are not attacked by rust. In several instances the Russians form a curious junction of European, and Asiatic manners; many of their ceremonies partake of Asiatic splendour: the great are fond of dwarfs; and some opulent ladies maintain female tellers of tales, whose occupation is to lull their mistresses asleep, by stories resembling those of the Arabian nights *.

LANGUAGE.] The Russian language is extremely difficult to pronounce, and not less difficult to acquire, as it abounds with extraordinary sounds, and anomalies of every kind. The characters amount to no less than 36; and the common sounds are sometimes expressed in the Greek character, sometimes in characters quite unlike those of any other language. The tones peculiar to the Russian are often expressed by letters which wear a very ill chosen semblance to the Greek or Roman. In some respects the sounds seem to approach the Persian and Arabic; a circumstance which can hardly arise from the Mahometan domination of the Tatars, as after Nestor, who wrote his annals about the year 1000, there is a succession of Russian authors. Among other singularities there is one letter to express the *sch*, and another the *ssch*, the latter a sound hardly pronounceable by any human mouth.

LITERATURE.] The Russian literature succeeded, as usual, the conversion of the empire to Christianity. As there is no inducement for strangers to learn the language, for the purpose of perusing works of genius, it is unnecessary to enlarge upon it in a work of this general nature. The elder authors are either writers of annals, or compilers of martyrologies, and lives of saints. Nestor, the eldest historian, also set an example of the latter kind. In recent times the best authors resident in Russia, such as Pallas, and many others, have had recourse to the German language: and little can be expected from the native literature, till the language shall have been reduced to the more precise alphabet, and polished form of other European dialects.

* For an account of the Samoieds, who first appear about 300 miles east of Archangel, the reader is referred to the Hist. Gen. des Voy. Tome xviii. Fr. edit. or xxiv. ed. Holl. 4to.

EDUCA-

EDUCATION.—UNIVERSITIES.] Education is little known or diffused in Russia, though the court has instituted academies for the instruction of officers and artists. The university of Petersburg, founded by the late Empress Catharine II. is a noble instance of munificence, and it is hoped will escape the fate of the colleges, founded at Moscow by Peter the Great, which do not seem to have met with the deserved success.

CITIES, TOWNS, &c.] In considering the chief cities and towns of Russia, Moscow the ancient capital attracts the first attention. This city dates from the year 1300, and is of very considerable extent, and population, though injured by a pestilence in 1771. Prior to this mortality the houses in Moscow were computed at 12,538, and the population at not less than 200,000 *. Moscow is built in the Asiatic manner, in which cities cover a vast space of ground. Petersburg, the imperial residence, is said to contain 170,000 inhabitants; and is the well-known, but surprising erection of the last century. This city has been so repeatedly described that the theme is trivial. Suffice it to observe that it stands in a marshy situation on the river Neva, the houses being chiefly of wood, though there be some of brick ornamented with white stucco. The stone buildings are few; and Petersburg is more distinguished by its fame, than by its appearance or opulence. The noblest public works are the quays, built of perpetual granite, while we employ perishable freestone.

According to the recent, more just arrangement of the grand natural boundaries between the continents of Asia and Europe, Astracan becomes an important accession to European geography. It is situated at the mouth of the Volga, and is supposed to contain 70,000 inhabitants.

Cronstadt in the government of Petersburg, and Kollonna in that of Moscow, are supposed each to contain about 60,000 inhabitants. Cherson in the government of Ecatharinslav, and Caffa in Taurida, are said each to contain 20,000; while 30,000 are ascribed to Tula, and 27,000 to Riga, a city of considerable trade and consequence. In general the Russian towns are built of wood, and present few remarkable edifices. A cathedral or two, and the royal palaces and fortresses, may deserve a description, better adapted to a book of travels, than to a work of this nature.

INLAND NAVIGATION.] The inland navigations of Russia deserve more attention. Among other laudable improvements, Peter the Great formed the design of establishing an intercourse by water between Petersburg and Persia, by the Caspian sea, the Volga, the Mesta, and the lake of Novogorod, &c. but this scheme failed by the ignorance of the engineers, and the Emperor afterwards employed Captain Perry, who rather taught the proper manner than completed any great work. During the long reign of the late Empress many canals were accomplished, or at least received such improvements that the chief honour must be ascribed to her administration. The celebrated canal of Vishnei Voloshok was in some shape completed by Peter, so as to form a communication between Astracan and Petersburg, the course being chiefly afforded by rivers, and it was only necessary to unite the Twertza running towards the Caspian, with the Shlina, which communicates with the Baltic. The navigation is performed according to the season of the year, from a fortnight to a month; and it is supposed that near 4000 vessels pass annually[1].

LADOGA.] The canal of Ladoga, so called, not because it enters that lake, but as winding along its margin, extends from the river Volkof to the Neva, a space of 67½ miles, and communicates with the former canal. By these two important canals constant intercourse is maintained between the northern and southern extremities of the empire. Another canal leads from Moscow to the river Don, forming a communication with the Euxine; and the canal of Cronstadt forms a fourth. Peter the Great also

* Coxe, Tr. in Poland, i. 351, 8vo. estimates from good evidence, the population at 250,000.

[1] Philips, 20. 29.

designed to have united the Don with the Volga, and thus have opened an intercourse between the Caspian, and Euxine seas and the Baltic: and the whole empire abounds so much with rivers that many advantageous canals remain to be opened. Some progress was made in a canal from the river Volkof towards the White Sea, which would considerably improve the commerce of Archangel.

MANUFACTURES AND COMMERCE.] By these means the inland trade of Russia has attained considerable prosperity; and the value of exports and imports have been long upon the increase. Several manufactures are conducted with considerable spirit.[2] That of isinglass, which is a preparation of the sounds, or air bladder of the sturgeon, flourishes on the Volga, the chief seat also of that of kaviar, consisting of the salted roes of large fish. The manufactories of oil and soap are also considerable; and Petersburg exports great quantities of candles, besides tallow, which abounds in an empire so well replenished with pasturage: nor must the breweries and distilleries be forgotten. Saltpetre is an imperial traffic, and some sugar is refined at Petersburg. There are several manufactures of paper, and of tobacco, which grows abundantly in the southern provinces. Linen is manufactured in abundance, the best comes from the government of Archangel. Cotton is little wrought, but the silk manufactories are numerous: coarse cloths, carpets, and hats are also made in Russia, and leather has long been a staple commodity. The mode of making Russian leather is described with great minuteness by Mr. Tooke.[3] Shagreen is made of chosen portions of the hides of the horse and ass, impressed with the hard seeds of certain plants, which are trodden in to mark the leather. Russia produces vast quantities of wax, which is however generally exported unbleached; nor are there wanting fabrics of earthen ware and porcelain. Iron founderies abound; and in the northern government of Olonitz is a grand foundery of cannon.

"The following is a state of the manufactories in Russia in 1803:

	Number in the whole Empire.
"For gold and silver leaf, gold lace, wire, &c.	37
Steel, cast iron needles, and other articles of iron and steel	26
Brass manufactories	37
Clocks and watches	1
Porcelain, earthen-ware, &c.	55
Colours, dye-stuffs, &c.	12
Glasshouses	107
Linen manufactories	283
Cotton ditto	53
Printed cottons	49
Cotton cloths	88
Paper	62
Ropes	55
Potash	84
Tobacco	6
Sugar Houses	6
Powder and Starch	12
Japanned Wares	1
Woollen cloth, and other woollen articles	155
Hats	71
Silk	321
Leather	843
Total	2,364

[2] Tooke, iii. 463, &c.

[3] Vol. iii. p. 513, &c.

"Seventeen

"Seventeen new manufactories were established in 1803 *."

The commerce of Russia was known in the middle ages, by the connection between the Hanse towns, in the north of Germany, and Novgorod, established about 1276. So wide is now this empire that it maintains a commerce of the most remote descriptions, on the Baltic, and the White Sea, the Euxine and the Caspian, with Persia, and with China. The English having, so to speak, discovered Russia in the sixteenth century, the Czar Ivan Basilowitz, delighted with this new intercourse, caused a harbour to be constructed on the White Sea, where the English arrived, which was called the harbour of the Archangel Michael, and afterwards, for brevity, Archangel. This commerce continued till Petersburg was founded: yet Archangel still affords a moderate trade, and exports pot ashes, kaviar, tallow, wax, hides, hemp, &c. with corn, linseed, coarse linens, and other articles. The commerce of Petersburg is much of the same description: that of Riga is very considerable, and to other articles are added masts from the Dnieper. Riga was the capital of Livonia, a province which formerly occasioned many disputes between Russia, Sweden, and Poland; but in 1710 was finally subdued by Peter the Great. In general the exports of Russia, by the Baltic, exceed the imports by one-third part. The imports of Petersburg in 1797 were computed at about 20,000,000 of rubles, or about. 4,000,000l. sterling. Russia is supposed to export grain annually to the value of 170,000l. and hemp, and flax, raw, and manufactured, to the amount of a million and a half sterling.

The commerce of the Euxine or Black Sea, is of inferior moment, chief exports, furs, salt beef, butter, cordage, sail cloth, kaviar, corn; with iron, linen, and some cotton stuffs. Imports, wine, fruit, coffee, silks, rice, and several Turkish commodities [4]. The commerce of the Caspian was known to the Genoese, who, by permission of the Byzantine emperors, had formed a settlement in Crim. The chief Russian harbours are Astracan, the chief seat of the Caspian commerce, Gurief, and Kisliar. Persian havens are Derbent, Nisabad and Baku; with Medshetizar, and Farabat on the southern shore of the Caspian. Astrabat opens the trade with Kandahar. From Astracan are exported many European manufactures; and the chief imports are raw silk, rice, dried fruits, spices, saffron, sulphur, and naphtha. The Hindoo merchants occasionally bring gold and precious stones. The annual trade is computed at 1,000,000 of rubles, or 200,000l. That of the Euxine is not above one-third of this value.

Russia likewise maintains some commerce by land with Prussia. That with Persia is of little moment; chief imports silk. There is a considerable trade by land with the Kirguses, who send horses, cattle, and sheep, in return for woollen cloths, iron, and European articles. That with China is nearly on a par; each country transmitting to the amount of about 2,000,000 of rubles (400,000l.) Russia exchanges her precious Siberian furs for tea, silk, and nankeen.

The internal commerce of Russia is very considerable; and Siberia is said to afford in gold, silver, copper, iron, salt, gems, &c. to the amount of 12,000,000 of rubles (2,400,000l.); that between the southern and northern provinces is also of great extent and value. The coin current in the empire is supposed to amount to about 30,000,000l. sterling, the paper money to about 20,000,000l. The Siberian gold and silver supply an important addition to the national currency.

* Russland's Handel Landwirthschaftlicke Kultur und Producte von, W. C. Friebe. Petersburg, 3 vols. 1796, &c.

[4] Tooke, iii. 572.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Russia in Europe, as may be expected in such a diversity of latitudes, presents almost every variety from that of Lapland, to that of Italy: for the newly acquired province of Taurida may be compared with Italy in climate and soil. But winter maintains the chief sway at Petersburg, the capital, and the Neva is annually frozen from November to March, or April. Euler has even observed that at Petersburg only two months in the year may be expected to be free from snow: and the climate around the frozen ocean, and the last European isle upon the north-east, that of Novaya Zemlia, or the New Land, is of noted severity, the northern side being encompassed with mountains of ice, and the sun not visible from the middle of October, till February; while it never sets during June and July. Taurida presents, on the contrary, all the luxuriance of the southern year, while the middle regions are blest with the mild seasons of Germany and England.

FACE OF THE COUNTRY.] In so wide an empire the face of the country must also be extremely various; but the chief feature of European Russia consists in plains of a prodigious extent, rivalling in that respect the vast deserts of Asia and Africa. In the south are some extensive *Steppes*, or dry and elevated plains, such as that above the sea of Azof, in length about 400 English miles. The numerous and majestic rivers also constitute a distinguishing feature of this empire.

SOIL AND AGRICULTURE.] The soil is of course also extremely diverse, from the chilling marshes which border the White and Frozen seas, to the rich and fertile plains on the Volga. The most fertile is that between the Don and the Volga, from Voronetz to Simbirsk, consisting of a black mould, strongly impregnated with saltpetre; that is, a soil formed from successive layers of vegetable remains[1]. The great extent of arable land might be much encreased if industry were more diffused. In Livonia, and Esthonia the medial returns of harvest are eight or ten fold; and the latter is generally the produce of the rich plains near the Don, where the fields are never manured, but on the contrary are apt to swell the corn into too much luxuriance. Pasturage is so abundant that the meadows are little regarded, and the artificial production of grasses is scarcely known. Some of the meadows are watered, and produce large crops of hay, the dry pastures (sometimes opened for grain) yield a short, but nutritious produce; in a few of the steppes the grass will attain the height of a man, and is seldom mown. In the sylvan age the annual burning of this grass, as practised by savages, may have produced the rich black mould so abundant in some large regions of the empire.

Agriculture is hardly known in the northern parts of the governments of Olonetz, and Archangel; but in the central parts of the empire has been pursued from time immemorial. The Russian plough is light and simple, and scarcely pierces the

[1] Tooke, i. 67.

ground to the depth of two inches; but in the southern provinces a heavier kind is used, resembling the German. In what is called the summer field the corn is sown and reaped in the same year; while in the winter field the corn is sown in autumn, and the produce reaped in the ensuing summer. The former yields what is called summer wheat, and rye, barley, millet, buck-wheat, flax-hemp, pease, &c.; the latter only wheat, or rye: and the winter field is commonly left fallow till the following spring. In general agriculture is treated with great negligence, yet the harvests are abundant; even in the neighbourhood of Petersburg there are large marshes which might be easily drained, and converted into fertile land. In the north, rye is most generally cultivated; but in the middle and the southern regions wheat: in the government of Ekatarinoslaf the Arnautan wheat is beautiful, the flour yellowish, the return commonly fifteen fold; nor is Turkish wheat, or maiz, unknown in Taurida. Barley is a general produce, and is converted into meal, as well as oats, of which a kind of porridge is composed. Millet is also widely diffused; but spelt, or bigg, little cultivated. Rice succeeds well in the vicinity of Kislear. Potatoes are unaccountably neglected, except in the north. This invaluable root bears the cold of Archangel, and yields from 30 to 50 fold. Hemp and flax form great objects of agriculture. Madder, woad, and saffron, grow wild in the south. The hop is also cultivated, and is found wild near the Uralian chain, and in Taurida. Tobacco has been produced since the year 1763, chiefly from Turkish and Persian seed. The olive has been tried in vain at Astracan; but prospers in the southern mountains of Taurida along the Euxine. In the gardens are cultivated cabbages, of which a great number is consumed in the form of sour-kraut, and other plants common in Europe. The government of Moscow produces abundance of excellent asparagus; and sugar melons abound near the Don and the Volga. Large orchards are seen in the middle and southern parts of Russia, yet quantities of fruit are imported. While apples, and pears are found as far north as the 49°, plumbs and cherries extend to the 55°. What is called the Kirefskoi apple often weighs four pounds, is of an agreeable flavour, and will keep a long time. A transparent sort from China is also cultivated, called the Nalivui, melting and full of juice.[2] The culture of the vine has been attempted in the south, and will certainly, with proper management, succeed in Taurida. Bees are not known in Siberia, but form an object of attention in the Uralian forests, where the proprietors carve their hives to a considerable height in large trees, and they are secured from the bears by ingenious contrivances described by Mr. Tooke. Mulberry trees and silk are not unknown in the south of European Russia.

Rivers. — Volga.] In enumerating the chief rivers of European Russia, the first attention is due to the majestic Volga. This sovereign of European rivers derives its sources from several lakes in the mountains of Valday, and government of Twer, between Petersburg and Moscow; and bends its chief course to the south-east till, near its junction with the Kama, an important river fed by many streams from the Uralian chain, it turn towards the south-west till it arrive at Tzaritzin. Its comparative course may be computed at about 1700 miles. This noble river, having no cataracts, and few shoals, is navigable even to Twer: but it is said that the stream has become more shallow even since the commencement of last century. The tributary rivers of the Volga are chiefly from the east, the Kama, which rivals the Volga at their junction, rising in the government of Viatka, and running north-west, afterwards due east, and

[2] Tooke, iii. 340.

then south. On the west the chief stream which runs into the Volga is the Oka, which rises in the government of Orel.

Don.] Next to the Volga, on the west, is the Don, or Tanais, which rises from a lake in the government of Tulan, and falls into the sea of Azof, after a course of about of 800 miles.

Neiper. The Neiper, or ancient Borysthenes, rises in the government of Smolensk, about 150 miles to the south of the source of the Volga, and about 100 to the south-east of that of the Duna, or Duina, which flows into the Baltic, by Riga; and after a course of about 1000 miles, through rich and fertile provinces, falls into the Euxine. The Bog, or Hypanis, a far inferior stream, falls into the Liman, or estuary of the Neiper.

Niester.] The Niester, or ancient Tyras, now forms the boundary between European Turkey and Russia, deriving its source from the north side of the Carpathian mountains, and falling into the Euxine at Akerman, after a course of about 600 miles.

Several important rivers direct their course towards the Arctic Ocean, such as the Cara, which though not a considerable river is yet remarkable, as once forming the boundary between Asia and Europe, for the space of about 140 miles, the Uralian chain terminating so far from the sea of Cara-skoi, or Karskoi.

Petshora.] The river Petshora rises in the Ural mountains, and joins the Frozen Ocean, after a course of about 450 miles.

Next, on the west, is the Mezen, which falls into the White Sea after a course of about 350 miles.

Dwina.] The Dwina falls into the gulph of Archangel, after a considerable course of about 500 miles. The Onega closes the list of the chief rivers that flow into the Arctic Ocean; for those of Olonetz, and of Russian Lapland, are of little consequence.

Neva.] The Svir joins the lake of Onega with that of Ladoga, which by the Neva, a more important stream, falls into the gulph of Finland. This river, pervading the city of Petersburg, is about 40 miles in length, but of considerable breadth and depth, and subject to violent floods, which have been recently guarded against by deepening the bed, and by erecting strong quays of granite.

The Narva also runs a short course from the Tchudskoi, or Peypus lake, into the Finnish gulph. The Pernof rises some miles to the west of the Peypus lake, and falls into the gulph of Riga.

Duna, &c.] But the most considerable stream in this quarter is the Duna, whose source has been already mentioned. It has some considerable and dangerous falls; and sometimes greatly injures the city of Riga at the breaking up of the ice. Its course is about 500 miles. The Niemen now forms a part of the boundary between Russia and Prussia, and is joined by a canal to the river Pripaz, which falls into the Neiper; but the cataracts in the latter river, about 250 miles above its estuary, greatly impede the intercourse that might thus be established with the Euxine.

Lakes. — Onega.] The chief lakes of European Russia are situated in the north-west division of the empire. There is a considerable lake in Russian Lapland, that of Imandra; to the south of which the government of Olonetz presents many extensive pieces of water, particularly the large lake of Onega, which is about 150 miles in length, by a medial breadth of about 30. The islands and shores of the Onega are chiefly calcareous, and contain some valuable marbles. To the west is the Ladoga, about 130 miles in length, by 70 in breadth, being one of the largest lakes in Europe. As it has many shoals, and is liable to sudden and violent tempests,

Peter the Great opened a canal along its shore, from the Volkof to the Neva. The fishery of this lake seems of little consequence; but the northern shores produce the beautiful Finnish marble, which is much used at Pertersburg.

PEYPUS.] On the south-west we find the lake of Peypus, about 60 miles in length by 30 in breadth: the northern part of this lake is styled that of Tshud, the south that of Pscove. From the Peypus issues the river Narova, or Narva, and there is an island, with three villages, called Bolka. Fish abound, particularly a kind which resembles the herring; barbel, pike, perch, carp, and others. To the east is the lake Ilmen, on which stands the ancient city of Novogorod. The Bielo, or White lake, is so called from its bottom of white clay. The lake of Coubenskoi, and a few others to the north-east, are of inferior note.

But the lakes that give rise to the famous Volga must not be omitted. The chief of these is the lake Seliger, in the government of Twer, which, though narrow, extends about 30 miles in length; and a smaller lake, not far to the west, emits another source of that august river.

MOUNTAINS.] It has already been mentioned that European Russia is rather a plain country, though some parts of it be greatly elevated, such as that which sends forth the three rivers of Duna, Volga, and Nieper. This region, which is passed in travelling from Petersburgh to Moscow, is by some called the mountains of Valday, from the town and lake of Valday, situated on the ridge; but by the natives it is styled *Vhisokaya Plostchade*, or elevated ground; and no mountains are here delineated in the common maps. In this quarter the ground is strewn with masses of granite, but the hills are chiefly marl, sand, and clay; and what are called the mountains of Valday seem to be a high table land, surmounted with large sand hills, and interspersed with masses of red and grey granite, with hornblende, shorl, and steatites: near Valday is the highest part of the ridge, which seems to be in a north-east and south-west direction. The hills, lakes, and groves are beautiful; and there is an island with a noble monastery. To the south of Valday the masses of granite become smaller, and more rare; and calcareous petrifactions appear, which are followed by the clay near Moscow. Some suppose the uplands of Valday to be an extension of the mountains of Olonetz, passing between the lakes Onega and Ladoga, and afterwards between those of Ilmen and Seliger; where is the chief ridge, and which seems to present the ruins of what was once a granitic chain. Mr. Tooke[3] computes the highest point of the Valday at only 200 fathoms above the level of Petersburg, about 1200 feet above the sea: the height is inconsiderable, and gives a striking impression of the gentle and plain level, through which such extensive rivers must pursue their course. The woods on the Valday are chiefly pine, fir, birch, linden, aspen, and alder: soil in the vales fertile, mostly clay and marl.

TAURIDA.] From the Valday towards the south, scarcely a mountain occurs; but after passing the steppe of the Nieper, an arid plain with salt lakes, which indicate the extent of the Euxine at remote periods, we arrive at the mountains of Taurida, which are rather romantic than of remarkable height, being calcareous and alluvial. To the south of this chain, along the shores of the Euxine, are the beautiful vales, so well described by Pallas, productive of the laurel, the olive, the fig, and the pomegranate, while the Arbutus adorns the steepest cliffs with its red bark, and foliage of perpetual green. The caper and the vine also abound in this natural orchard: and the flocks of sheep and goats feeding on the hills, or bounding from the rocks, unite with the simple and good humoured manners of the Tatar inhabitants, to render the scene truly pastoral.

[3] Vol. i. 130.

Olonetz.] But the most important chains of mountains in European Russia remain to be described, those of Olonetz in the furthest north, and those of Ural which separate Europe from Asia. The chain of Olonetz runs in a direction almost due north, for the space of 15° or about 900 geographical miles. The most arctic part is said to consist chiefly of granite, gneiss, petrosilex, and schistose limestone; and is not of great height, but retains perpetual snow from the altitude of the climate. More to the south, branches stretch on the east towards the gulph of Kandalak; the granite is intermixed with large sheets of talc, and patches of trap are found, particularly near the gold mines of Voytz, on the western side of the river Vyg. Various other ores occur in this region, and veins of copper pyrites appear in the trap. Towards the lakes of Onega and Ladoga, the calcareous rather preponderates, as already mentioned.

Ural.] In the centre, between the mountains of Olonetz and those of Ural, there seems to be a considerable chain extending from the east of Mezen to the Canin Nos, a bold promontory which rushes into the frozen ocean; but this chain appears to have escaped the searches of curiosity or avarice, by the perpetual snows with which it is enveloped. The immense Uralian chain extends from about the 50th to near the 67th degree of north latitude, or about 1000 geographical miles in length, and has by the Russians been called *Semenoi Poias*, or the girdle of the world [4], an extravagant appellation, when we consider that the chain of the Andes extends near 5000 miles. Some modern authors have imagined that this chain is the same with the Riphæan mountains of antiquity; which, on the contrary, as appears from Ptolemy and others, ran from east to west near the head of the Tanais or Don, and must of course have been only a forest running through the centre of Russia, as the ancients often confounded mountains and forests under the same appellation. Pauda, one of the highest mountains of the Uralian chain, is reported by Mr. Gmelin to be about 4512 feet above the level of the sea, an inconsiderable height, when compared with M. Blanc or M. Rosa. The central part of this chain abounds in metals, from Orenburg on the south, to the neighbourhood of Perm, where on the Asiatic side are Venchoutury on the north, Ekatarinenburg on the south, places remarkable for opulent mines. The highest ridges are chiefly granite, gneiss, and micaceous schistus, while the exterior hills of the chain on the west, are as usual calcareous. Serpentine, jasper, and trap, are also found, with argillaceous schistus, and other varieties, to be expected in so long a chain. The woods are chiefly pine, fir, birch, cedar, larch, aspin, alder, and on the south-west sides are a few oaks, elms, and lindens.

Forests.] European Russia is so abundant in forests that it would be in vain to attempt to enumerate them. There are prodigious forests between Petersburg and Moscow, and others between Vladimir and Arzomas. Further to the south there seems to have been a forest of still greater extent, probably as already mentioned the Riphæan forest of antiquity, in the direction of the rich black soil so remarkable for its fertility *.

Botany.] When we consider the vast extent of territory comprehended under the European sovereignty of Russia, from the frozen shore of Archangel to the deli-

[4] Pennant, A. Z. i. 158. Pallas in his travels, Paris 1793, 8 vols. 8vo. gives an account of these mountains. In his third volume he says, that the eame *Oural Taou* signifies mountains of the belt; but, according to others, *Ural* means an eagle. Pallas says, that the eastern side presents petrosilex, jasper, slate, and argillaceous schistus rich in minerals. There is one mountain of mica, and another of asbestus, called the Silken Mountain.

* Mr. Coxe, Travels in Poland, &c. vol. i. 323, 341, describes the vast forest of Volkonski, as beginning near Viasma, and continuing almost to the gates of Moscow, as he travelled through it without interruption for 150 miles. He says that the Volga, Duna, and Dnieper arise in this immense forest, which consists of oaks, beech, mountain-ash, poplar, pines, and firs, mingled together in endless variety.

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cious climate of the Crimea, and that the whole of this great empire has scarcely produced a single naturalist of any eminence, all that is known of its vegetables, animals, and minerals, being collected for the most part within the last 40 years by a few foreigners, under the munificent patronage of Catharine II., it will be evident that the rudiments alone of the Russian flora can as yet be extant. The provinces bordering upon the Baltic, and the newly acquired government of Taurida, have been examined with some attention, and a few striking features of the botany of the interior of the country have been described by travellers: but many years of patient research must elapse before the natural history of Russia is advanced to an equal degree of accuracy with that of the western parts of Europe *.

The Russian provinces north of the Baltic, contain the same plants as those of Swedish and Norwegian Lapland, which will be hereafter described. Such as extend between the 50th and 60th degrees latitude, abound principally in the common vegetables of the north of France and Germany, some of which, however, are wanting, on account of the greater severity of the Russian winters from their proximity to the vast plains of Tatary and the forests of Siberia. The trees of most use and in greatest abundance are the *fir*; the *Scotch pine*; the *yew-leaved fir*; and the *larch*: all of which mingled together, form the vast impenetrable forests, whence the rest of Europe is principally supplied with masts, deals, pitch, and tar. The other forest trees are the *elm*; the *lime*, of the inner bark of which the Russian mats are made, and from whose blossoms the immense swarms of wild bees collect the chief part of their honey; the *birch*; the *alder*; the *aspen*; the *greater maple*; and the *sycamore*: of the shrubs and humbler plants, those of most importance are *mountain-ash*, from whose berries by fermentation and distillation an ardent spirit is obtained; the *cloudberry*; the *cranberry*; the *bearberry*; and the *stone bramble*; the fruit of all which, for want of better, is highly esteemed, and is either eaten fresh or is preserved in snow during the winter: the *Angelica*, whose succulent stalks when candied form a favourite conserve with most of the northern nations; as well as the following vegetables, most of which are either found only in our flower gardens, or are of rare occurrence in a truly wild state in Britain, *pyramidal bell-flower*; the *holly-hock*; *Moldavian balm*; *evening primrose*; *mezereon*; and *hepatica*.

Quitting the pine forests of the north and middle of Russia, if we turn our attention to the few vegetable productions that have as yet been noticed amidst the myriads that adorn and enrich the broad vales of the Don and the Dneiper, that glow upon the warm shores of the Black Sea, or luxuriate in the delicious recesses of Taurida, we shall see what a rich harvest is reserved for future naturalists, and with what ease the inhabitants, when once become civilized, may avail themselves of the uncommon bounties of their soil. Here rises in stately majesty for future navies the oak, both the common kind and the species with prickly cups; the *black* and the *white poplar*, of unusual size, skirt along the margins of the streams: the *ash*; the *horn-beam*; the *nettle-tree*, occupy the upland pastures, and the elegant *beech*, crowns the summits of the limestone ridges. Of the fruit-bearing shrubs and trees, besides the *gooseberry*, the *red*, the *white*, and the *black currant*, which are dispersed in abundance through the woods, there are the *almond* and *peach*; the *apricot* and *crab-cherry*; the *medlar*; the *walnut*; the *mulberry*; the *olive*; the *fig*; the *vine*; and the *pomegranate*. Of the ornamental shrubs and plants the following are the most distinguished: the *dwarf almond*; the *laurel*; the *pyracantha*; the *bay-tree*; the *common and shrubby jasmine*; and the *tamarisk*.

* Pallas, Flora Russica. Gilibert, Flora Lithuanica. Gorter, Flora Ingrica.

Zoology.] The zoology of Russia is vast and various, and only a very slight sketch can here be attempted. The more peculiar animals are the sea bear of Novaia Zemlia, and the souslik of the south. In the more northern parts are found the wolf, the lynx, the elk; nor is the camel unknown in the lower latitudes. The animals in the centre seem common to the rest of Europe. Among the more useful animals the horse has met with deserved attention, and the breed in many parts of the empire is large, strong, and beautiful. Near Archangel are found poneys, or small horses, as in the northern latitudes of the British dominions; but Lithuania produces steeds of great strength, while those of Livonia excel in speed; the spirit and beauty of the Tatarian horses have been long celebrated, and have been improved in Taurida by the introduction of Turkish and Arabian stallions. Yet numbers of horses are annually imported at Petersburg.

Even the country near Archangel is remarkable for excellent pasturage and fine cattle, which may be said in general to abound in the empire. The sheep in the northern provinces are of a middle size, short-tailed, and the wool coarse; nor is proper attention paid towards improving the breed. Those in the south are long-tailed, and yield a superior wool; but the best is from the ancient kingdom of Kazan, and other regions in the east of European Russia. The islands of Oesel and Dago have an excellent breed, with wool equal to the English. In Taurida it is said that common Tatars may possess about 1000 sheep, while an opulent flock is computed at 50,000: those of the whole peninsula were supposed to amount to 7,000,000. The mutton is excellent, but the wool coarse, though the lambs' skins be valued for their fur. Goats and swine also abound throughout European Russia; nor is the rein-deer unknown in the furthest north; so that the empire may be said to extend from the latitude of the rein-deer to that of the camel.

Mineralogy.] The chief mines belonging to Russia are in the Asiatic part of the empire, but a few are situated in the European, in the mountains of Olonetz; and there was formerly a gold mine in that region near the river Vyg. In the reign of Ivan Basilowitz, the English in 1569, obtained the privilege of working mines of iron, on condition that they should teach the Russians this metallurgy. During the reign of Alexis, the first regular mines were established in Russia, about 60 miles from Moscow, and they are still continued: but Peter the Great was the founder of the Russian mineralogy, by the institution of the College of mines in 1719; and copper and iron were successfully wrought in the territory of Perm. About 1730 the rich mines began to be discovered in the Asiatic part of the empire, the description of which is reserved for the second volume of this work. In 1739 gold was first observed in the chain of Olonetz, as already mentioned; and the mines of Voytzer near the Vyg were opened, but with little success, as they only yielded about 57 pounds of gold in the year, which hardly recompensed the price of labour [5]. This noble metal seems to require the full power of the sun; and gold mines have rarely succeeded at a distance of more than 50° from the equator*.

Gold Mine.] "The newly discovered gold mine† in the Ekatharinburg circle of the Uralian mines gives always the best hopes. Of 60,000 poods of ore which had been dug up to the month of October 1804, 12,000 had been smelted, and produced

[5] Tooke, iii. 402, &c. The chief iron mines are at Dougna near Smolensk.

* M. Romme brought from the shores of the White Sea a yellow aventurine, of which I saw specimens at Paris, but which did not seem so beautiful as the red aventurine.

† This was published in 1804.

about 13 pounds of pure gold. A peasant who discovered the mine obtained a pension of 200 rubles *."

MINERAL WATERS.] European Russia being a plain country can boast of few mineral waters. There is a hot spring near Selo Klintschy, in the government of Perm : and a noted chalybeate in the village of Buigova in the district of Olonetz, called St. Peter's Well, by Peter the Great, who erected near it some houses and a church. The soil is so strongly impregnated with iron, that roots of trees and other vegetable substances have been often found, converted as it were, into ores of that metal. But the most celebrated is near Sarepta on the Volga, discovered in 1775. The springs are here numerous and copious, and strongly impregnated with iron. In the district of Perekop, and on the isle of Taman, belonging to the government of Taurida, there are springs of Naphtha [6].

NATURAL CURIOSITIES.] The natural curiosities of Russia in Europe have scarcely been enumerated, except those which indicate the severity of winter in so northern a clime. Not to mention the rocks of ice, of many miles in extent and surprising height which navigate the frozen ocean, adorned like cathedrals with pinacles, which reflect a thousand colours in the sun, or Aurora Borealis ; it is well known that the empress Anne built a palace of ice, on the bank of the Neva, in 1740, which was 52 feet in length, and when illuminated had a surprising effect. The 13 cataracts of the Nieper, about 300 miles above its estuary, are composed of successive banks of granite, which project through the bed of the river ; and in the government of Olonetz other curious cataracts may be found. In the same region, near those mountains which abound with iron, are found various fragments of birch trees and other vegetables mineralized by that metal, while the texture of the wood remains visible, and the tender white rind, which strongly resists corruption, preserves its original appearance. The soil is changed into ferruginous earth, and the grassy sod becomes iron ore [7].

RUSSIAN ISLES.

THE small isle of Cronstadt, in the gulf of Finland, was formerly called Retusavi, and is only remarkable for an excellent haven, strongly fortified, the chief station of the Russian fleet. In the Baltic, Russia also possesses the islands of Oesel, and Dago, which are of a considerable size but full of rocks : the marble of the first island is however beautiful. Both isles are chiefly peopled by Estonians.

NOVAYA ZEMLIA.] There are several isles near the shore of Russian Lapland, and in the White Sea, but generally barren and uninhabited rocks. Novaya Zemlia, or the New Land is also uninhabited, and is said to consist of five isles, but the channels between them are always filled with ice [8]. Seals, walruses, arctic foxes, white bears,

* Russlands Handel landwirthschaftlicke Kultur und Producte von W. C. Friebe, Petersburg, 3 vols. 1796, &c.

[6] Tooke, i. 283.

[7] Tooke, i. 109. In the journey of the elder Gmelin to Siberia in 1733, of which a French translation is given in the first supplement to the *Histoire Generale des Voyages*, forming in the French edition the eighteenth volume, 4to , and the twenty-fourth of the Dutch, there is p. 105 ; a plan and description of the large and curious grotto of Kungur, on the western side of the Uralian mountains. There is also, p. 498, an interesting account of the Samoieds who first appear beyond the river Mezen, about 300 miles to the east of Archangel. It is a singularity, p. 503, that the Samoied girls are married at the age of ten years, thus corresponding with the Sicilian in the furthest south of Europe.

[8] Pennant, Arc. Zool. clx.

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and a few rein-deer, constitute the zoology of this desert; and are occasionally hunted by the people of Mezen. To the south of Novay Zemlia is the sea of Cara (Karskoye), in which the tide flows about two feet nine inches *.

SPITZBERGEN.] The remote and dreary islands of Spitzbergen having been taken possession of by the Russians, they may be here briefly described. This country has by some been styled New Greenland, a name which accurately belongs to the western side of Greenland Proper, in North America, while the eastern side is called Old Greenland, as having been anciently planted by the Danes, though since blocked up by ice. The main land of Spitzbergen extends about 300 miles, from the south cape, lat. 76° 30′, to Verlegan-Hook, lat. 80° 7′. In an adjacent small isle are said to be basaltic columns, from 18 to 20 inches in diameter, and mostly hexagonal [9]. Drift-wood is frequent in these northern latitudes, partly perhaps from the banks of the Ob, and partly from America, there being a strong current from the West Indies to the north-east. Spitzbergen is supposed to have been first discovered by the Dutch navigator Barentz in 1596. The mountains are of granite and grit, the highest not exceeding 4000 feet; for mountains in general decline in height towards the poles. The icebergs, or glaciers, in the north-east of Spitzbergen, present a singular appearance, being high cliffs of an emerald colour, impendent over the sea, with cataracts of melted snow, and a back ground of black conic hills streaked with white. The sea itself contains mountains of ice, formed by aggregation; a large field forcing a smaller out of the water till it lodges upon the superior surface, and the height is afterwards increased by the snow, till it sometimes rises to 1500 feet. The snow in these high latitudes often falls as hard and minute as fine sand. About the first of November the sun sets, and appears no more till the beginning of February; and after the beginning of May it never sets till August. Coals are found in Spitzbergen, but even the vales are covered with eternal ice or snow. The only tree is the dwarf willow, which rises to the height of two inches, towering with great pride above the mosses, and lichens, and a few other cumbent plants. Here are found polar bears, foxes, and rein-deer, with walruses, and seals. There are a few kinds of water fowl; but the whale is the lord of these arctic seas. The Russians from Archangel maintain a kind of colony; and that northern region seems indeed to have a natural right to Spitzbergen. To the north-east of this dreary group are the small isles, called the Seven Sisters, the most arctic land yet discovered; and the dangers which Mr. Phipps, afterwards Lord Mulgrave, suffered near the Seven Sisters are well described in the account of his voyage.

This description ſhall be terminated by some account of the Russian American Company, whose transactions have hitherto escaped due notice:—

THE RUSSIO-AMERICAN COMPANY.] The origin of this trading company may be traced back to those hunting and trading expeditions, undertaken by the Russians since the year 1745. The discovery of Kamtschatha, and the possession of it by the Russians in 1696—1706, soon gave rise to two voyages of discovery in the eastern

* In the first volume of the *Voyages pour l'Etablissement de la Compagnie des Indes*, Amst. 1716, 8vo. there is a curious account of the voyage of the Dutch to Novaya Zemlia, 1596, where they wintered. This singular and interesting narrative is unaccountably omitted in the *Voyages au Nord*, where there are several that rather belong to this collection. Both are miserable compilations of Bernard, a French bookseller in Holland.

But as we are there informed, I. 194, it was Burroughs, an Englishman, who discovered Novaya Zemlia in 1556, according to Pontanus in his Dissertation here printed. In 1553, Willoughby was frozen to death at the mouth of the river Petsora, in the north of Russia, not in Lapland.

[9] Pennant, Arct. Zool. cxxxii.

ocean; the first of which took place in 1725—1730, and the second in 1732—1743. The object of the former was to shew the separation of Asia from America. By means of it a more accurate knowledge was not only obtained of the Kurile Islands, the existence of which had been known to the Russians since 1711; but the Alieutian Islands were discovered in 1741. This last discovery was attended with the most important consequences to commerce.

After the second Kamtschatdale expedition no further researches were undertaken in these seas at the expence of government, till the year 1768; but the exertions of private individuals, to take advantage of those already made, and to carry them still further, were the more active. The quantity of furs which the navigators sent upon these expeditions brought back with them, induced some merchants, in the year 1745, to undertake a new expedition, the result of which was the discovery of Copper Island. After that period scarcely a year elapsed in which this and the neighbouring islands were not visited by some vessels in order to obtain furs, and particularly sea-otter skins, the sale of which, on the Chinese frontiers, opened a new and very important branch of trade. The ships were fitted out at Ochotzk, where there had been a regular establishment for ship-building ever since 1714. As the catching of sea-otters was attended with advantage also to the crown, the governors of Irkusk, Ochotzk, and Kamtschatka, encouraged the merchants and adventurers of these districts by every means in their power to undertake new expeditions; and the consequence at length was, that, by the year 1750, all the Alieutian islands, and even the eastern ones, were discovered and annexed to the Russian empire. The sea-otter skins became gradually the basis of the Russio-Chinese trade; and of course this trade tended in a very great degree to promote the discoveries of the Russians on the north-west coast of America.

The Russians had long carried on this profitable trade in private, without any suspicion on the part of the other European nations that their intercourse with China was of so much importance; but this interesting circumstance was at length made known by the third voyage of Captain Cook, and a rival spirit of trade was thereby awakened in other nations, and particularly in Britain. The Chinese were now supplied with these valuable furs not only by the Russians on the Chinese frontiers, but by other European nations at Canton. In the year 1787 twenty-five vessels, manned by a thousand Russians and Kamtschatdales sailed from Kamtschatka for the fur trade. At the same time, that is, in 1786, 1787, and 1788, above eight thousand sea-otter skins were brought to Canton by twelve English and two French ships. Spain and the United States of America also took a considerable share in this trade.

The adventurers in the Russian expeditions were at first for the most part Siberian merchants and Cossacks: as their expeditions were carried further and became more expensive, this branch of trade came by degrees into the hands of a few rich merchants at Irkusk, Tobolsk, and other trading towns in the interior of Russia, among whom were the merchant Schelikof, at Rylsk, and his partners, the two brothers Golikof at Kursk. None of the trading houses was more active than this. Schelikof himself undertook several voyages to the islands and the north-west coast of America; he also published an account of his voyage, by which he rectified the knowledge of these parts, in which he even made new discoveries; and at length formed a considerable establishment on the island of Kadyak; which since that period has been the staple or centre of the whole trade *. He and his partners first assumed the name of the Ame-

* This respectable member of society died in 1797. The emperor Paul conferred the rank of noble upon his widow, who had accompanied her husband in all his voyages, and also upon her descendants. Resanof who went out as embassador to Japan was son-in-law of Schelikof's widow.

rican Company. In the year 1798 this company united itself with the Irkuski trading company, at the head of which was a merchant named Mylnikof; and it then took the title of the United American Company. Twenty mercantile families had shares in it. In the year 1799 this company obtained a patent from the emperor by which it was established as a privileged trading company under the title of the Russio-American Company.

The capital of this company was of two kinds: the real capital subscribed by the twenty original partners, and a credit capital.

The former, in the year 1798, consisted of 724,000 rubles, divided into 724 shares of 1000 rubles each. The amount of the latter, for which the company issued bills, can be known only from their books.

The principal factory is at Irkusk; besides which there are four subordinate ones, namely, at Ochotsk and in the islands Kadyak, Onalaschka, and Kurilskaya Gryæda.

It is managed by two directors, or four if circumstances should require it. The shares may be transferred by sale or in any other manner. It was an exclusive privilege for twenty years. The present emperor Alexander made a present to the company, in 1802, of ten thousand rubbles; and besides subscribed his name for twenty shares, to be sold for the benefit of the poor. The possessions of the company are as follows:

I. The Kurile Isles comprehending eighteen large and a number of smaller islands. The eighteenth or most southern island is called, in the language of the natives, Urup, and by the Russians, who on a bay on the eastern coast of it have the establishment Kurile Rossiy (formerly Kurilskaya Griæda), is called Alexander's Island. One of the factories is established in this island. The Japanese islands immediately adjacent to Alexander's Island are Atorkue, Kunaschiri, Tschikota, and Matmai. The last mentioned large island is separated from the island of Niphon only by a narrow strait.

II. The Alieutian Islands comprehend the Alieutian, Andreanofski, and Fox Islands as far as the peninsula Aliaska. The company has establishments in almost all these islands; but the most important are in the islands of Atcha and Onalascha. The second of the four factories already mentioned is also in the latter.

III. The Renaiski group of islands is formed by the large island Kadyak and a number of smaller ones scattered around. Kadyak and Afognak were first occupied and further explored by Schelikof between 1783 and 1787. Radyak is at present the most important possession of the company. In this island there are several establishments, the largest of which is Fort St. Paul, the seat of the third factory and of the governor or chief agent of the company. The harbour of St. Paul is dangerous for ships of a certain size. The best harbours are at the Fort of the Three Holy Fathers, named after one of the three ships with which Schelikof performed his first voyage south-west from St. Paul; and Kukak a small island, a little distance to the east of the above fort.

IV. The possessions of the company on the continent of America, which extend along the north-west coast from latitude 55° north, to beyond Bering's strait. On that immense range of coast which stretches north from the peninsula Aliaska, and on the peninsula itself the company have formed no establishments; but they are visited by its ships: and the large Russian maps exhibit between latitude 60° and 67° 52 settlements of the natives, which for the most part lie on the sea coast, but sometimesat a considerable distance from it, on rivers and inlets of the sea that penetrate a good way into the country.

The

The coast of the continent, lying east from the peninsula Aliaska, was first taken possession of for the Russian empire in the years 1788 and 1789, by Schelikof, or rather by a Greek, named Dalaref, who was then chief factor of his company. This coast contains two large bays, the Renaiski, formerly called by the English Cook's River, but at present after Vancouver, Cook's Inlet; and the Tschugazki, called by the English Prince William's Sound. The Russian appellations are borrowed from the names of the tribes who inhabit the districts in the neighbourhood of these bays. Both these inlets higher up are separated only by a narrow tongue of land, which the Russians sometimes cross, carrying with them their small vessels.

On the Renaiski bay or sound (Cook's River or Inlet) the company has the following establishments:

A settlement on the left or west shore in latitude 61° 8′ north, and logitude 227° 20′ west. It is marked in Vancouver's map.

Fort Paulofsk, in latitude 60° 40′ north, and longitude 227° 18′ west. This settlement is also marked in Vancouver's map, but the situation is not properly determined.

Fort Georgiefsk, in latitude 60° 20′, and longitude 227° 5′.

Fort Alexandrofsk, near Cape Elizabeth and harbour of the same name, in latitude 59° 17′, and longitude 226° 41′. These three forts are on the right or eastern side of the sound.

On the Bay or Sound Tschugazki (Prince William's Sound) are the following establishments:

Fort Moskressensk, in latitude 60° north, and longitude 228° 42′. There is here a very good harbour, at which the company have established a dock.

A fort and harbour in the island Delaref (according to the Russian map Nichlay Tuk).

The fort and harbour of Constantine and Helena in the island Tchalcha, (called by the English Hichinbrook) in latitude 60° 22′ north, and longitude 231° 40′. This establishment is marked very accurately in Vancouver's map. (The harbour is called by the English Port Etches.)

On the coast below the Bay Tschugaski the company has

Fort Simeon, on Cape St. Elias (Cape Suckling). A fort on the Bay Yukutat (called by Cook Bering's Bay.)

The Harbour Ladyshinsk in Vancouver's Island Bay, which belongs to the Archipelago of King George.

Lastly the most southern establishment in the Bay Sitka, called by the natives Tschinkitane, by the Spaniards Baye de Guadeloupe, and by the English Norfolk Sound. In this bay lies the island of Sitka, which was taken possession of by Baranof, the director of the company in 1799; and on which he constructed the fort of the Archangel Michael. This island is now called by the Russians Baranof's Island. The hill on it, called by Cook Mount Edgecumbe, was seen in the year 1742 by Tscherikof and called the Hill of Lazarus.

Besides these four factories at Ochotzk, Kadyak, Onalaschka, and Kurilo-Rossiy, the company have four more in Kamstchatka, namely at the harbour of St. Peter and St. Paul, at Bolscherezk, Nishney-Kamtschatska and Tigilsk.

The number of all the Russians settled at present (1803) on the coast of America is estimated at seven hundred.

The company have established at St. Paul, in the island of Kadyak, a school and library, which already contains more than a thousand volumes in history, geography, and also nautical books with charts. A considerable addition was sent out with Admiral Knuenstern, who went to Japan. The company have also undertaken to propa-

gate the Christian religion in these distant parts; and to open new sources for trade by sea with China and Japan; also to introduce among the natives agriculture and the breeding of cattle.

It appears by a statement published in 1805 that on making up the accounts to the year 1804, it was found that the clear profit for the years 1802 and 1803, on each share, was about 156 rubles *.

* Russlands Handel landwirthshaftlicke Kultur und Producte von W. C. Friebe. Petersburg, 1797, &c.

AUSTRIAN
DOMINIONS
GERMANY
BOHEMIA
MORAVIA
SILESIA
GALICIA
HUNGARY
TRANSYLVANIA
BUKOVINA
CROATIA
SLAVONIA
DALMATIA
ITALY
TURKEY
RUSSIA
PRUSSIA
POLAND
GULF OF VENICE
DANUBE R.
Vienna
Prague
Dresden
Breslau
Munich
Salzburg
Trieste
Venice
Pesth
Buda
Belgrade
Warsaw
Lemberg
Cracow
Peterwardein
Temesvar
Hermannstadt
Klagenfurt
Innspruck
Trient
Verona
Mantua
Milan
Turin
Ofen
Presburg
Olmutz
Brunn
Leitzchau
Eperies
Kaschau
Debritzin
Szegedin
Funskirchen
Theresiopel
Essek
Zombor
Semlin
Carlstadt
Laybach
Udine
Fiume
Rovigno
Pola
Cittanova
Grosso I.
Carlobago
Grachaz
Otochatz
Szluyn
Zrin
Petrinia
Kobatsch
Posliega
Neiska
Podvorie
Tchasma
Strasch
Dardo
Apathy
Temerin
Batsa
Koyesta
Petschka
Albunar
Margna
Orawiza
Mehadia
Weiskerchen
Opocsna
Saska
Holme
Kubin
Semlin
Ruma
Save R.
Merwitz
Illyria
Carinthia
Styria
Croatia
Slavonia
Dalmatia
Bohemia
Moravia
Silesia
Galicia
Hungary
Transylvania
Bukovina
Wallachia
Moldavia
Bessarabia
Podolia
Volhynia
Lithuania
Courland
Prussia
Poland
Russia
Turkey
Italy
Germany
Austria
Switzerland
Bavaria
Saxony
Danube R.
Inn R.
Drave R.
Save R.
Theiss R.
Vistula R.
Oder R.
Elbe R.
Bug R.
Dniester R.
Pruth R.
Aluta R.
Maros R.
Marosch R.
Kamp R.
Leytha R.
Raab R.
Mur R.
Adige R.
Po R.
Brenta R.
Piave R.
Tagliamento R.
Isonzo R.
Lake Balaton
Lake Neusiedler
Lake Constance
Lake Garda
Lake Como
Lake Maggiore
Lake Lugano
Lake Balaton
Lake Peipus
Lake Ladoga
Lake Onega
Lake Aral
Lake Baikal
Lake Ilmen
Lake Chudskoe
Lake Pskov
Lake Peipus
Lake Ladoga
Lake Onega
Lake Aral
Lake Baikal
Lake Ilmen
Lake Chudskoe
Lake Pskov

AUSTRIAN DOMINIONS.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names.—Extent.—Boundaries.—Original Population.—Progressive Geography.—Present Boundaries.—Historical Epochs and Antiquities.

THE dominions subject to the house of Austria embrace many ancient kingdoms and states, which, for the sake of perspicuity, are here brought under one point of view; it having been urged as a reproach to modern geography, that by the obstinate retention of antiquated divisions, and the confused minuteness of separate descriptions, it has not made an uniform progress with modern history and politics, which it ought to illustrate. Hence, to use the present instance, many are led to imagine that the power of the house of Austria is chiefly founded on its bearing the imperial title, whereas, if reduced to the regal style of Hungary, its hereditary domains entitle it to rank among the chief European powers, being of wide extent, and great importance, and boasting a population of not less than 20,000,000, more concentrated than the diffuse population of Russia, and perhaps the next power to France, not in arms only, but on the broad and deep-rooted basis of compact numbers of inhabitants.

In describing a sovereignty, thus composed of many ancient states, it may seem proper to pay the first and chief attention to that part which gradually spread its domination over the rest, or in other words, that which was the earliest important inheritance of the ruling family. The remaining provinces will of course be considered in proportion to their real and lasting importance; while the more minute districts may be abandoned to the sedulous care and microscopic labour of the topographer. On this plan the provinces that will here require particular observation are the archduchy of Austria; the kingdoms of Hungary, and Bohemia; the grand-duchy of Transylvania, which, with the Buckovina, may be regarded as belonging to Hungary; and lastly that part of Poland which has fallen under the Austrian sceptre.

NAMES.] The archduchy of Austria may be considered as belonging, in part, to ancient Pannonia, the Vindobona of the Romans being the modern Vienna. But that half of Austria, which lies north of the Danube, was occupied by the Quadi, a barbaric nation, who anciently infested the adjoining provinces of Pannonia and Noricum: for the western part of Austria, on the south of the Danube, falls under

the latter ancient appellation. The German name and division of Osterich *, or the eastern kingdom, softened into Austria by the Italian and French enunciation, arose after Charlemagne had established the western empire, being a remnant of the sovereignty of what was called Eastern France, established by that conqueror. It was also styled *Marchia Orientalis*, the eastern march, or boundary: and after the failure of the Francic line became a marquisate feudatory to the dukes of Bavaria, till the emperor Frederic Barbarossa, in 1156, constituted it a duchy held immediately of the empire [1]. Hungary, a part of which belonged to ancient Dacia, derives its modern appellation from the Ugurs, a Finnish nation, who, after spreading devastation through a great part of Germany, fixed their residence here in the tenth century; the writers of the middle ages, confounding their real appellative with that of the Huns, a different and here extinguished nation, who had formerly possessed this province. In the time of Charlemagne it was possessed by the Avars, a Slavonic people [2]. The Hungarians style themselves Magiar; and their language approaches to the Finnic dialect. Bohemia, or the habitation of the Boii, was a central province of Barbaric Germany, afterwards seized by a Slavonic tribe, whose chiefs were originally styled dukes of Bohemia. Transylvania, and the Buckovina † are parts of the province of Dacia, founded by Trajan. The former is by the Hungarians called Erdeli: by the Germans Siebenburgen, or the Seven towns, from a colony there established: the more common name seems derived from the woody passes of the Carpathian mountains, and was imposed by the monkish writers. The origin of the other names becomes difficult, in exact proportion to their unimportance; and is more fit for the investigation of the antiquary than for the present design.

EXTENT.] From the frontiers of Swisserland, to the utmost limits of Transylvania, the length of the Austrian dominions was about 760 British miles; the breadth, about 520 from the river Bug, which forms a boundary between Austria and Prussian Poland, to the Save, which divides the Austrian from the Turkish sovereignty. The square contents may be about 184,000 miles. Boetticher estimates the inhabitants at 108 to a square mile; but since he wrote, the Netherlands, a populous region, seem to be withdrawn from the house of Ausria.

Towards the eaſt, the Austrian dominions border on those of Russia and Turkey, and to the north on those of Prussia, Upper Saxony, Bavaria ‡, and Swabia. On the utmoſt west, are Swisserland and Italian states.

The state of the Austrian dominions has been considerably changed by recent events. Venice has become a part of the kingdom of Italy; and the blindness of Austria towards this venerable republic may be regarded as absolute iufatuation. Tyrol has become assigned to the elector, now king, of Bavaria; who alſo shares with the new king of Wirtemberg the Austrian possessions in Swabia. Such are the most essential terms of the treaty of Presburg, 26 December 1805. The counties of Salzburg and Berchtolsgaden are incorporated with the empire of Austria. By this remarkable treaty the Austrian emperor,

"Cedes and abandons to his majesty the king of Bavaria the Margraviate of Burgau, and its dependencies; the principality of Eichstadt; the part of the territory of

* Several of the German names of Austrian provinces differ considerably from our appellations. Carinthia is Carnten (Brown, 125); Carniola, Krain; Stiria, Steyermark; Croatia, Crabaten; Bohemia, Boehmen; Moravia, Mahren. Galitz, or Galitzia is wrongly styled Galicia.

[1] D'Anville, Etats formés en Europe, p. 51. [2] Gibbon, x. 204.

† This province became subject to Austria in 1777, and was annexed to Galitz. Inhabitants about 130,000, who speak Polish, and German. Religion, Roman Catholic.

‡ Since 1779 the boundary between Austria and Bavaria is the river Inn, with part of the Salza, a small district being acquired by Austria, which is called the Inn-ziertel.

The county of Gorz, with some surrounding territory extending on the west of the River Judri, is called Friaul, or the Austrian Friulese, in the maps published at Vienna 1796.

Passau, belonging to the elector of Salzburg, and situated between Bohemia, Austria, the Danube, and the Inn; the country of Tyrol, comprehending therein the principalities of Brixen and Botzen, the seven lordships of the Voralberg, with their detached dependencies; the county of Hohenems, the county of Konigsegg, Rottensels, the lordships of Tetnany and Argen, and the town and territory of Lindau.

"To his majesty the king of Wirtemberg, the five cities of the Danube, to wit, Chingen, Munderkengen, Rufflingen, Menzen, and Salgaw, with their dependencies, the city of Constance excepted; that part of the Brisgaw which extends in the possession of Wirtemberg, and situated to the east of a line drawn from Schlegelburg to Molbach, and the towns and territories of Willengen and Brentengen. To his most serene highness the elector of Baden, the Brisgaw (with the exception of the branch and separate portions above described), the Ortensaw and their dependencies, the city of Constance, and the commandery of Meinau *."

It has been asserted that Austria was to be partly indemnified for these important cessions by the acquisition of Bosnia and Servia from the Turks; but as the French have seized on Cattaro, and the Dalmatian territories of the former republic of Venice, it may be doubted whether her policy would permit the increase of the power of Austria in that quarter.

Original Population.] The original population of these extensive regions is various, but chiefly Gothic and Slavonic. The native ancient Germans, a Gothic race, form the ruling, most industrious, and most important part of the inhabitants. Bohemia and Moravia were originally Slavonic kingdoms; and the people of Poland and Hungary may be generally referred to the same origin; for in the latter kingdom the Magiars, or Ugurs †, who use a dialect approaching the Finnish, did not supplant the Slavons, whom they found in the country: and who, on the fall of the Roman empire, had succeeded the Dacians, a Gothic race.

Progressive Geography.] The progressive geography of the southern part of the Austrian dominions commences at an early period. Yet the Adriatic was not a favourite sea of the Greeks; and the Roman writers throw the first steady light upon these regions. Passing from Cisalpine Gaul, in defiance of the barriers of the Rhætian, and Carnic, or Julian Alps, now the mountains of Tyrol, Carinthia, and Carniola, the Roman generals subdued many barbarous tribes; and founded the provinces of Noricum, and Pannonia, their most northern acquisitions in this quarter, till Trajan added Dacia. The Rhætians were subdued by Drusus, in the reign of Augustus, under whose sway, or rather in the time of his successor Tiberius, Pannonia and Noricum also became provinces of the Roman empire. Concerning those regions much information may be derived from the luminous page of Tacitus; and soon after, the geography of Ptolemy opens additional illustrations. The common resources of ancient geography are continued by the Byzantine writers; and after the age of Charlemagne, by many historians of the west. Since the invention of printing to the present period, the geography of these extensive provinces has been gradually improved, though not with the rapidity which might have been expected, as they unfortunately have not produced many men of acute genius, extensive learning, or exact science; and the best accounts are derived from writers in the north of Germany, or from foreign travellers ‡.

* Recent disasters have occasioned yet further cessions; but the power of Austria seems somewhat consolidated by the marriage of Napoleon with the Austrian princess.

† Whence perhaps the terrible Ogres, and Ogresses of heraldry, which commenced soon after the cruel incursions of these people.

‡ Even one of the last maps of Hungary, that by Mess. Artaria & Co. Vienna, 1792, is meanly executed, and very defective in displaying the chains and altitude of mountains, which are laid down as they might have been a century ago.

HISTORICAL EPOCHS.] The historical epochs of various kingdoms and states, recently united under one sovereignty, must of course be subdivided into their original distinct portions, beginning in the order above-mentioned, with the first important state, around which, as a nucleus, the others are conglomerated; but proceeding thence to the other provinces, according to their modern extent, and importance.

1. The house of Austria, which by successive fortunate marriages since the fifteenth century, has arisen to such a summit of power, is well known to have sprung from the humble counts of Hapsburg. Those lords possessed a small territory in Swisserland, in the northern corner of the canton of Bern, near the river Aar, about three miles south of the town of Bruck, and the same distance to the north of Mellingen [3]. On a lofty eminence, crowned with beech, stands an ancient tower, the first seat of the house of Austria. In the twelfth century Otho is designed count of Hapsburg, and even heraldry can scarcely ascend beyond his grandsire Radebot, brother of Werner, bishop of Strasburg. In 1273 Rodolph of Hapsburg was called to the imperial throne, after an inter-reign, during which the German potentates had increased, and secured their own power; and wisely preferred a nominal sovereign, whose humble extract, and small possessions could afford no check to their ambition. Yet Rodolph was at this time lord of the greater part of Swisserland after the extinction of the powerful house of Zaeringen, and that of the counts of Kyburg, whose joint inheritance devolving to Rodolph, became the basis of his power, and that of his successors [4].

2. Another emperor of the house of Austria appeared in Albert, A. D. 1298; from whom the Swiss made their signal revolt in 1307. His son Frederic was obliged to yield the empire to Louis of Bavaria.

3. Albert II. duke of Austria, A. D. 1438, succeeded to three crowns, on the death of his father-in-law the emperor Sigismond, those of Hungary, and Bohemia, and that of the empire by unanimous election. This was the epoch of the lasting grandeur of the house of Austria. Yet his successors Frederic III. and Maximilian I. were feeble princes; and Charles V. firſt astonished Europe with a real display of Austrian power.

4. Maximilian having married the heiress of Burgundy, the Netherlands became subject to the house of Austria in 1477, and his son Philip, in 1496, marrying the heiress of Arragon and Castile, the ample dominions of Spain fell afterwards under the Austrian sceptre. Charles V. inherited all these dominions; but on his resignation Spain and the Netherlands passed to his son Philip II. and the former crown continued in the Austrian line till the close of the seventeenth century. Austria, Bohemia, and Hungary, passed to Ferdinand the brother of Charles V. who was also chosen emperor of Germany.

5. The noted bigotry of the house of Austria was not confined to the Spanish branch, for though Maximilian II. about 1570, had granted liberty of conscience even to the protestants of Austria, yet those of Bohemia, and other parts, were afterwards so much oppressed, that the protestant princes of Germany called in Gustaf Adolf, the celebrated Swedish monarch, to their assistance, who shook the empire to its very foundations. Even France supported the protestants, in the view of weakening the Austrian power; and the war continued till 1648, when the famous treaty of Westphalia was signed, which has served as a basis for other diplomatic transactions.

6. The war with France was often rekindled during the long reign of Leopold I. 1658, to 1705; and in 1683, the Turks were so successful as to lay siege to Vienna.

7. His son Joseph I. joined the allies against France, and shared in their success. He married the daughter of John Frederic duke of Hanover.

8. By the death of the emperor Charles VI. on the 20th October, 1740, without male issue, the house of Austria became extinct. The elector of Bavaria seized the kingdom of Bohemia, and was elected emperor in 1742, but died in 1745.

[3] Coxe's Swisserland, i. 135. [4] Planta's Swiss. i. 170.

9. Francis of Lorrain, son of Leopold duke of Lorrain, having married Maria Thereſa, daughter of the emperor Charles VI., ſucceeded to the Austrian dominions, which continue to be held by his descendants. In 1745 he was elected emperor, and his successors have enjoyed the imperial crown, as if hereditary. The powerful houſe of Lorrain is of great antiquity, descending from Gerard count of Alsace, in the eleventh century, whoſe origin is referred to a collateral branch of the house of Austria.

10. The reign of the emperor Joseph II., a beneficent but impetuous prince, whoſe grand designs of reformation were frustrated by his ignorance of the inveteracy of habits and prejudices, which must ever be considered in a due estimate of human affairs.

11. The obdurate and sanguinary contest with France, the events of which are known to all.

Having thus briefly marked the chief epochs of the Austrian power, the events of the subject kingdoms and states must be as much compressed as possible. The next in importance are those of the kingdom of Hungary.

1. The Roman province of Dacia. The conquest by the Huns; and afterwards by the Avars, and other Slavonic tribes.

2. The conquest by the Ogurs, or the Magiars, who continued under dukes from their first settlement in 884.

3. St. Stephen first king of Hungary, A. D. 1000. The crown is partly elective, and partly hereditary; and among the chief historical events are the wars in Dalmatia, against the Venetians.

4. Louis I., surnamed the Great, A. D. 1342, subdues a great part of Dalmatia, and carries his arms into Italy. He was succeeded by his daughter Mary, who was styled *King* of Hungary; but dying in 1392, the succession became controverted, and at last terminated in the election of Sigismond, marquis of Brandenburg, who had wedded Mary the heiress. In 1411 he was chosen emperor of Germany.

5. Albert of Austria having wedded Elizabeth the heiress of Sigismond, was, with her, crowned king and queen of Hungary, 1438: an event which forms the earliest basis of the Austrian claim to the Hungarian monarchy. Upon the death of Albert, Ladislas, king of Poland, is also chosen king of Hungary, but periſhes in the battle of Werna against the Turks. The famous John Hunniades is appointed regent of the kingdom.

6. On the death of another Ladislas, the posthumous son of Albert of Austria, in 1457, the celebrated Mathias Corvinus, son of Hunniades, is proclaimed king of Hungary by the states, assembled in the plain of Rakos, near Pest. In 1485 he seized Vienna, and the other Austrian states, and retained them till his death in 1490. Mathias was the greatest prince who had ever held the Hungarian sceptre, brave, prudent, generous, the friend of arts and letters, and a man of letters himself. He founded a magnificent library at Buda, and furniſhed it with the best Greek and Latin books, and many valuable manuscripts.

7. After repeated contests, the house of Austria again fills the throne of Hungary, in the person of Ferdinand, 1527, but towards the end of his reign the Turks seized on the greater part of this kingdom. On his being chosen emperor of Germany, Ferdinand retained the crown of Hungary till 1562, when he resigned it to his son Maximilian; and it has since continued a constant appanage of the house of Austria.

The grand-duchy of Transylvania was considered as a part of Hungary till 1540, when, in consequence of a treaty between the Vaivod, and Ferdinand of Austria, Transylvania began to be regarded as a distinct state. Stephen Battori having been elected prince of Transylvania in 1571, that family continued to hold this petty sove-

reignty till 1602, after which it continued subject to several elective princes, of whom the most distinguished was Bethlem Gabor, or Gabriel Betlem, a noble Hungarian, and a Calvinist, who conquered a great part of Hungary in 1619, and died in 1629. The last prince of Transylvania was Michael Abaffi, the second of that name, who yielded the sovereignty to the emperor in 1694, since which period this country has formed a part of the Austrian dominions.

The historical epochs of the kingom of Bohemia deserve more attention.

1. In the seventh century the Slavons seizing on Bohemia were ruled by chiefs, or dukes, seemingly hereditary, at least after Borzivoi, who embraced Christianity in the year 894. In the eleventh century Bretislas subdued the little adjacent kingdom of Moravia.

2. Vratislas duke of Bohemia is honoured with the regal title by the emperor Henry IV. in 1806; who at the same time invested him with the domains of Lusatia, Moravia, and Silesia. But this dignity was personal; and the constant title of king only dates from Premislas II., in 1199. He and his immediate successors are styled Ottocari, from their zeal in the cause of the emperor Otto.

3. One of the most renowned monarchs was another Premislas Ottocar, who ascended the throne in 1253, seized Austria, and Stiria, and other provinces to the south, and carried his arms into Prussia. In 1271 he refused the imperial crown, which was afterwards given to Rodoph count of Hapſburg, who insisting on the restitution of the Austrian states, Ottocar said that he had paid Rodolph his wages, and owed him nothing; for that count had been his marechal, or master of the horse. A reconciliation was effected by matrimonial alliances, and by Ottocar's receiving the investiture of Bohemia, and Moravia, on renouncing Austria, Stitria, and Carinthia. His son Winceslas was elected king of Poland; but refused the sceptre of Hungary in favour of his son.

4. The ancient lineage having failed, John count of Luxembourg, who had married a daughter of Bohemia, became king in 1310, and was slain at the battle of Creci, fighting against the English in 1346. His son and successor, Charles, was also emperor of Germany.

5. In the reign of Wenceslas king of Bohemia, and emperor, John Huss having read the books of Wickliffe the English reformer, introduced his doctrines into Bohemia. He was condemned to the flames in 1415. The Bohemians and Moravians have since become remarkable for various sects of religion, and consequent intestine commotions. The Hussites under Ziska, repeatedly defeated the troops of their king Sigismond, brother of Wenceslas, and also emperor of Germany.

6. Albert of Austria, having wedded the daughter of Sigismond, received the crowns of Bohemia and Hungary. But the succession was afterwards controverted and infringed by George Podiebrad, (a Hussite chief, who obtained from the weakness of the emperor Frederic III. of the house of Austria, the crown of Bohemia in 1459,) by Vladislas son of the Polish monarch, and by Mathias king of Hungary.

7. Louis, son of Vladislas, succeeded his father in the kingdoms of Bohemia and Hungary; but being slain at the battle of Mohatz, 1526, the crown finally passed to the house of Austria.

ANTIQUITIES.] The ancient monuments of the more northern kingdoms and provinces belonging to Austria, cannot be expected to be very numerous or important. Vindobona, and the adjacent parts of Noricum and Pannonia, occasionally display Roman remains; but the ruins of the celebrated bridge of Trajan, over the Danube, belong to Turkey in Europe, being situated not far from Wildin, in Bulgaria: it is supposed to have consisted of twenty arches, or rather vast pillars of stone, originally supporting a wooden fabric of the length of more than 3,300 English feet. In Hungary, and

other parts of the ancient province of Dacia, appear many relics of Roman power, as military roads, ruins, &c. and an elegant historian remarks "that if we except Bohemia, Moravia, and the northern skirts of Austria, and a part of Hungary between the Teyss and the Danube, all the other dominions of the house of Austria were situate within the limits of the Roman empire [5]." Hungary, and the other provinces of the Austrian dominions, having been frequently exposed to the ravages of war, many ancient monuments have perished; yet several castles, churches, and monasteries still attest the magnificence of the founders [6]. The cathedral church of St. Stephen, in Vienna, is a Gothic fabric of singular pomp, and minute decoration.

[5] Gibbon, vol. i. page 22.

[6] Dr. Brown's Trav. Part ii. p. 80.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE preponderant religion of the Austrian dominions is the Roman Catholic, but attended with a considerable degree of toleration. Protestants of various sects are found in Bohemia, and Moravia; nor are Lutherans unknown at Vienna, though they chiefly abound in Transylvania [1]; nay in Hungary it is believed that the protestants are equal in number to the catholics [2]. Vienna did not become a metropolitan see till the year 1722: the archbishop is a prince of the holy Roman empire. The present state of the ecclesiastical geography, the number and boundaries of the bishoprics, &c. would require some investigation not interesting to the general reader *.

GOVERNMENT.] The form of government is an hereditary monarchy, and approaching to absolute power. For though Hungary retains its ancient states, or rather an aristocratical senate, yet the dominions being so various and extensive, and the military force wholly in the hands of the sovereign, no distinct kingdom or state can withstand his will; and except most oppressive measures were pursued, there can be no general interest to league against him. Even Austria has its states, consisting of four orders, clergy, peers, knights, burgesses; the assembly for Lower Austria being held at Vienna, and that of the Upper at Linz [3]. But those local constitutions can little avail against the will of a powerful monarch, supported by a numerous army.

LAWS.] The laws vary according to the different provinces, almost every state having its peculiar code. The Hungarians in particular have vigorously defended their ancient laws, though in many instances illaudable, the peasantry being in a state of villanage till 1785 [4]. Yet what is called the Urbarium, published by the Empress Theresa in 1764, attempted with some success to define the rights of the landlords, and of the peasants, and was received for law. In 1786 Joseph II., after suppressing villanage in Bohemia and Moravia, extended the like freedom to Hungary; and this decree remains uncancelled, though many of the laws of that well-meaning, but injudicious monarch, expired with their author. Yet the boasted freedom of Hungary is rather that of a powerful aristocracy, than of the people at large. In general the laws may be regarded as mild and salutary; and the Austrians in particular are a well

[1] Busching, vi. 540. Townson, 181.

* Hungary, the principal province, contains two archbishoprics and fifteen bishoprics, including Bosnia and Croatia. The Archbishop of Gran has about 36,000l. a year, the others do not exceed 8,000l. — Townson, i. 137.

[3] Busching, vi. 536. last French edition. [4] Townson, 102, 107.

regulated

regulated and contented people, while the Hungarians are often dissatisfied, and retain much of their ancient animosity against the Germans. As Hungary is the most important province of the monarchy, it might perhaps have been more prudent to have there established the royal residence and seat of power, had not the repeated subjugation of a great part of that kingdom by the Turks rendered such a design precarious.

POPULATION.] The general population of the Austrian dominions is computed at more than 20,000,000: that of Hungary, Transylvania, and the Buckovina, being estimated at four millions and a half. Yet some authors compute the population of Hungary alone at 7,000,000; and a late German author has in consequence swelled the general population of the Austrian dominions to 25,000,000 [5]. Hence, upon the whole, it will be reasonable to allow 23,000,000 as a medial computation of the numbers subject to the Austrian sceptre.

Of the other chief provinces, Bohemia is supposed to hold two millions and a half; and Moravia one million and a half. The whole acquisitions in Poland may contain more than 3,000,000 *; while the archduchy of Austria is computed at 1,685,000.

Austria may be regarded as an inland power, the small harbour of Trieste being little known in commerce. Hence no foreign colonies have been planted by the Austrians.

ARMY.] The army was computed by Boetticher at 365,455 men, in 136 regiments, of which 46 are German, and only 11 Hungarian. This numerous army has been greatly diminished in the sanguinary contest with France; and perhaps could not have equalled that of Prussia, computed at 200,000; and far less that of the great military power of Russia, doubling that number.

NAVY.] An Austrian ship of the line would be regarded as a novelty on the ocean.

REVENUE.] The revenue is computed at more than 10,000,000l. sterling; to which Austria contributes about 3,000,000l., and Hungary a little more than a million and a half. This revenue used to exceed the expences; but the public debt now, probably, surpasses 40,000,000l. sterling, and the recent wars have occasioned great defalcations.

POLITICAL IMPORTANCE AND RELATIONS, 1802.] Vast are the political importance and extent of the relations of the Austrian sovereignty. Setting aside the consideration of his influence, as emperor, over the German states, the monarch might have been regarded as an equal rival of France, and only inferior to the preponderance of Russia. Since the Austrian dominions and power have been swelled to their modern consequence, a determined rivalry has existed between them and France, which has, with reason, been jealous of the Austrian ambition. Alliances, even cemented by intermarriage, have not been able to overcome the opposition of interests; and England being also the rival of France, it has frequently become an unavoidable policy to maintain this dissension. There are also causes of confirmed jealousy between Austria and Prussia; and it is doubtful if even an invasion from Russia would compel them to unite in a defensive alliance. The inveterate wars with Turkey, and the radical difference of religion and manners, more impressive from vicinity, have also sown irreconcilable hatred between the Austrians and Turks; and the ambition of Austria eagerly conspires with Russia against European Turkey. Amidst so many enmities, and the necessary jealousy of Russian power, it would be difficult to point out any state on the Continent with which Austria could enter into a strict and lasting alliance. The most natural and constant may be that with England, whose maritime power might inflict deep wounds

[5] See Townson, chap. v.

* Hoeck computes Eastern Galitz and Lodomiria at 2,797,119; and Western Galitz at 1,106,178. But the loss of Venice, Tyrol, and the Brisgaw, &c. &c. &c. will not be easily repaired.

upon

upon any enemy; but against Russia an alliance with Prussia would be indispensable *.

* Since this chapter was at the press, an important work has come to hand, intituled *Aperçu Statistique des Etats de l'Allemagne; sous le rapport de leur Etendue, de leur Population, de leurs Productions, de leur Industrie, de leur Commerce, et de leurs Finances; par Hoeck, Conseiller de Justice du Roi de Prusse*, &c. Paris, An ix. (1801), large folio. This work is certainly the most complete view, which has appeared, of the numerous and important German states. But it is a great defect that there is no general sum of the entire population, &c. &c. of each sovereignty.

Bohemia is estimated at 2,806,493: Moravia 1,256,240: duchy of Austrian Silesia 250,000: Austria 1,820,000: Stiria, &c. 1,645,000: Tyrol 610,000: Hungary 6,315,000: Illyria 1,035,000: Transylvania 1,443,364: Galitz, &c. 2,797,119: Western Galitz 1,106,178: Bukovin 130,000. That is, in all, little more than 20 millions.

In like manner the Commerce, Army, Square Miles, Finances, are only particularized under each subdivision, without general estimates, a plan which leads to perplexity and additional labour, though the work be highly valuable in other respects.

CHAP.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] VARIOUS are the manners and customs of the numerous kingdoms and provinces subject to the house of Austria. Vienna, the capital, presents as it were an assemblage of nations, in their various dresses. In Austria proper the people are much at their ease; and the farmers, and even peasantry, little inferior to those of England. Travellers have remarked the abundance of provisions at Vienna, and the consequent daily luxury of food, accompanied with great variety of wines. The Austrian manners are cold, but civil: the women elegant, but devoid of mental accomplishments, the only books they read being holy legends [1]. The use of rouge is universal, but moderate; and the dress is singularly splendid. They retain the absurd fashion, universal on the Continent, of dressing little girls like women, with the high powdered head and the hoop. The manners somewhat partake of the Italian and Spanish cicisbeism, forming in this respect a kind of medium between the profligacy of the south of Europe, and the decency of the north. The Austrian youth of rank are commonly ignorant, and of course haughty, being entire strangers to the cultivation of mind, and condescension of manners, to be found among the superior ranks of some other countries, a circumstance more striking to the English traveller in particular from the violence of the contrast. An Austrian nobleman or gentleman is never seen to read, and hence polite literature is almost unknown and uncultivated; nor have the Austrians yet claimed any share in its progress in Germany. Yet the emperor having long been considered as the highest power in Europe, the Austrians affect to consider themselves as superior to other nations. It is to be regretted that a more rational mode of education is not followed, which would open their minds to the numerous delights and advantages arising from scientific pursuits, and deliver them from many vain superstitions, as they believe in ghosts and familiar spirits, and in the idle dreams of alchymy. In consequence of this ignorance the language remains unpolished; and the Austrian speech is one of the meanest dialects of the German, so that polite people are constrained to use French. The lower orders are, however, little addicted to crimes or vices, and punishments are rare: robberies are seldom committed, and murder little known. When capital punishment becomes unavoidable, it is administered with great solemnity, and accompanied with public prayers, an example worthy of universal imitation.

The next people in estimation, and the first in numbers, is the Hungarians. Their manners are now considerably tinctured by those of the ruling Germans, but they remain a spirited people, and affect to despise their masters. Their dress is well known

[1] Wraxall's Memoirs, ii. 240, &c.

to

to be peculiar, and is copied by our hussars [2]. This dress, consisting of a tight vest, mantle, and furred cap, is graceful; and the whiskers add a military ferocity to the appearance. In other respects recent travellers do not seem to have been impressed with much distinction between the Austrian and Hungarian manners.

LANGUAGE.] The languages spoken in these aggregated dominions are numerous and discrepant. They belong chiefly to three grand divisons, the Gothic or German of the ruling nation, which will gradually exclude the others: the Slavonic of the Poles *, part of the Hungarians, the Dalmatians, &c. and also the ancient speech used in Bohemia and Moravia; and lastly the Hungarian proper, which has been considered as a branch of the Finnic. Among people of rank at Vienna the French was formerly prevalent, as already mentioned; but this fashion is perhaps impaired by recent events, and the use of the polished German of Saxony would not only be more appropriate, but might tend to diffuse a national taste and native literature. Riesbeck observes that in Swabia, Bavaria, and Austria, the German is very impure.

LITERATURE.] The literary history of the Austrian dominions cannot ascend to a remote period. That of Austria proper, in particular, is little interesting, and even the chronicles and lives of saints are comparatively recent. If the Emperor Maximilian, grandfather of Charles V., be the author of an eccentric poem alluding to the events of his own life, and usually ascribed to him, though many assign it to his chaplain, he may be considered as the father of Austrian literature, as well as of Auſtrian greatness. But the succession of authors is interrupted; and many of those who flourished at Vienna were aliens. Wolfgangus Lazius is but a dreaming antiquary: and in the same century Cuspinian has ridiculed Haselbach, the professor of divinity, who having begun a course of lectures on Isaiah, had not in twenty-one years finished the first chapter. The like perversity of taste continues to modern times; and Reisbeck has depicted in warm colours the metaphysical absurdities of the Austrian professors, and the abject tone of slavery and flattery which pervades even the little solid literature that is known [3]. For at Vienna the Emperor is considered as the successor of Augustus, as absolute monarch of Germany; while in the other provinces of that wide region, he is more justly regarded as a nominal head, though highly respectable as King of Hungary and Bohemia. In the medical branch, Van Swieten, Storck, and others, have acquired deserved celebrity: but though Vienna swarms with pretended literati, or men who can talk and write nonsense in Latin, there are a few who have acquired a shadow of reputation, such as Hell, Martini, Denis, and Sonnerfels; yet the first was a Silesian, and Denis from Bavaria. In antiquities occur the names of Froelich, and one or two other numismatic writers, who compose vast volumes upon small subjects.

Bohemia and Hungary have no ancient claims to literature. Cosmas of Prague, a venerable historian, flourishing about the year 1130; and Hungary has a cotemporary father of history in the anonymous notary of King Bela [4]. Yet the encouragement given to writers by the celebrated Mathius Corvinus little stimulated native literature, for Bonfinius was an Italian. Nor is there any Hungarian writer particularly celebrated among the modern Latin classics; nor the native language yet known by any work commanding celebrity. Baron de Born, a native of Transylvania, has written many able works in natural history; but he used the Latin and French languages. An enquiry into the causes which have retarded the progress of letters and philosophy in the

[2] In the Hungarian, Huszar implies the twentieth, because twenty peasants are obliged to furnish one horseman to the cavalry. Busch. iii. 56.

* Nor is it disused in Bohemia, which may be regarded as the extreme western limit of the Slavonic tongue; for the people extend to the mouth of the Elbe.

[3] Travels, vol. i. 283.

[4] Katona, Hist. Crit. Hung. Proleg.

Austrian dominions, would be more useful than the bare enumeration of a few names: they would be found to arise partly from the coarseness of the German dialect, and the absence of the Slavonic and Hungarian from the learned languages of Europe; partly from numerous wars of ambition, which sometimes endanger the very existence of the state; in yet greater measure from the military education of the nobility, or rather indeed from their ignorance, for many consummate officers have been men of letters: but above all, this defect must be ascribed to that metaphysical bigotry, which perverts their rational powers, and blights every bud of genius and solid knowledge. The books prohibited at Vienna probably exceed in number those of the Roman Index Expurgatorius; and though the government have no doubt a right to watch over those of a political tendency, yet this jealousy needs not be extended to works of mere science, written by heretics. On the other hand, some blame must doubtless extend to authors who introduce into scientific productions their political dogmata, and visionary views of social perfection, with attacks upon established forms of worship and government, totally unlike the procedure of the ancient philosophers, who were teachers of content and moderation. Yet a government should select the happy mean between that fanatic bigotry, which alike freezes literature and every branch of industry; and that licentiousness of the press, which by wantonly sapping personal reputation, and the laws, tends to destroy every habit of virtue, and can only lead to anarchy.

EDUCATION.] The empress Theresa instituted schools for the education of children, but none for the education of teachers. Hence the children are taught metaphysics before they know Latin; and a blind veneration for the monks forms one of the first exertions of nascent reason. Yet the example is highly laudable, and with all its disadvantages may lead to important consequences.

UNIVERSITIES.] The universities, like those in other catholic countries, little promote the progress of solid knowledge. The sciences taught with the greatest care, are precisely those which are of the smallest utility. The university of Vienna has, since the year 1752, been somewhat improved. It was founded in 1237, and that of Prague in 1347; that of Inspruck only dates from 1677, and Gratz from 1585[6]. Hungary chiefly boasts of Buda, though the jesuits instituted academies at Raab and Caschau *. A late traveller[7] informs us that the university of Buda, by the Germans called Offen, possesses an income of about 20,000l. sterling, only 4000 of which are applied to pay the salaries of the professors. Besides the usual chairs which exist in every university, there are those of natural history, botany, and œconomy. The collection of instruments for natural philosophy, and the models of machines, are good; and the museum of natural history, which contains the collection of the late professor Piller, besides that of the university, may be ranked among the fine collections of Europe." There is a Calvinist college or university at Debretzin: and the bishop of Erlau has recently established a splendid university at that city[8].

Vienna, the chief city of the Austrian dominions, lies on the south or rather west side of the Danube, in a fertile plain watered by a branch of that river, (beyond which stands the suburb of Leopold-stadt,) and by the little river Wien. The Danube is here very wide, and contains several woody isles: the country towards the north and east level, but on the south and west hilly, and variegated with trees. It is founded on the site of the ancient Vindobona; but was of little note till the twelfth century, when it became the residence of the dukes of Austria, and was fortified in the manner

[6] Dufresnoy, Methode Geog. iii. 271.
* The university of Tyrnau has been recently transferred to Pesth. Townson, p. 439.
[7] Townson, p. 79. [8] Ib. 225. 238.

of that age. The manufactures are not inconsiderable; some inland commerce is transacted on the noble stream of the Danube *. The number of inhabitants is computed at 254,000. The suburbs are far more extensive than the city, standing at a considerable distance from the walls. The houses are generally of brick covered with stucco, in a more durable manner than commonly practised in England; the finest sand being chosen, and the lime, after having been slacked, remaining for a twelvemonth, covered with sand and boards, before it be applied to the intended use. The chief edifices are the metropolitan church of St. Stephen, the imperial palace, library, and arsenal, the house of assembly for the states of Lower Austria, the council-house, the university, and some monasteries. The prater, or imperial park, is an island in the Danube well planted with wood; and to the south is the chapel of Herenhartz, which during Lent is much frequented for the sake of amusement as well as of devotion. Provisions of all kinds abound in Vienna, particularly wild boars, venison, and game; many small birds, rejected by us, being included among the latter. Livers of geese are esteemed a peculiar delicacy; nor are tortoises, frogs, and snails rejected †. The people delight in the combats of wild beasts, and of bulls. In one of the suburbs is the palace of Belvidere, which formerly belonged to Prince Eugine; and at the distance of a few miles stands Schonbrun, another imperial palace. Though Vienna be much exposed to the northern and eastern winds, yet the southern hills serve as a fence against the rain, and the traveller rather complains of dust than of moisture. The pleasantness of the environs in general is improved by the happy aspect of the Austrian peasantry.

PRAGUE.] The honour of the second city in the Austrian dominions must be claimed by Prague, the population being estimated at 80,000. This metropolis of Bohemia stands on both sides of the river Mulda, over which there is a noble bridge of stone, founded in 1357. The fortifications are of small moment; but the houses are of stone, and commonly three stories in height. This city has had the fatality of being exposed to frequent sieges, commonly fortunate to the aggressors. About a sixth part of the population consists of Jews.

GRATZ.] Next, though at a great distance, stands Gratz, the capital of Stiria, supposed to hold 35,000 souls. This city stands on the west side of the river Muehr, joined by a bridge to an extensive suburb on the opposite bank. There are regular fortifications; and on a bold rock near the river is placed a strong citadel.

PRESBURG.] Presburg, the capital of Hungary, only contains about 27,000 inhabitants, its precedence being of modern date, after Buda, the ancient capital, had been repeatedly taken by the Turks ‡. Presburg is beautifully situated on the Danube, towards the western extremity of Hungary, being only about 35 British miles to the east of Vienna; but the position is still more uncentrical than that of Buda. The Danube is here very rapid, and about 250 yards in breadth. About one quarter of the inhabitants are Lutherans, who are so opulent as to pay about one half the taxes. A good theatre, and convenient coffee-houses, contribute to the pleasure of the inhabitants. Jews also abound in this city.

BUDA, OR OFFEN, &c.] Buda, by the Germans called Offen, the ancient metropolis of Hungary, is now reduced to little more than 20,000 inhabitants; but if the city of

* The manufactures are on the increase, particularly those of cotton. See Hoeck, who says, there are 140,000 workmen at Vienna, and some towns in Lower Austria.

† Riesbeck, himself a German, blames the Austrians, i. 237, for gluttony, and a certain indescribable coarse pride. Yet he highly praises the schools, p. 280. The richest subject by his account was Prince Lichtenstein, who had about 90,000l. sterling a year, while Esterhazy only enjoyed 60,000.

‡ Townson, 440. *Alba Regalis*, formerly celebrated, is now Stuel Weissenburg, 34 British miles south-west of Buda. *Alba Græca*, or Griechs Weissenburg, is Belgrade.

Pesth

Pesth be included, which stands on the opposite side of the Danube, over which there is a bridge of boats, the population may be computed at 34,000. Dr. Townson even allows 38,000. The chief public and private buildings are in Pesth, and within the fortress: the royal palace in particular, is a large and stately edifice. At Buda there are hot springs; and the people, like those of Vienna, delight in bull-feasts and exhibitions of wild beasts. In 1784 the seat of the provincial government, and the public offices being restored from Presburg to Buda, the latter joined with Pesth may still be regarded as the capital of Hungary.[9] The mining cities of Schemnitz and Cremnitz do not exceeed 8000 inhabitants each:[10] but Hermanstadt the capital of Transylvania, in Latin *Cibinium*, from the river Cibin, is supposed to contain 17,000. It is the chief seat of the Saxon colony; but the air is unhealthy. The Buckovina, annexed to the Austrian territory in 1777, contains no town of consequence.

LEMBERG.] That part of Poland which was acquired in 1772, and divided into two provinces called Galitzia and Lodomiria, presents Lemberg, or Leopold, of 20,000 inhabitants, and some other considerable towns.[11]

TRIESTE.] Brunn, in Moravia, is computed at 18,000; and Olmutz, in the same country, at 12,000; and the latter number is also assigned to Troppau, in the Austrian part of Silesia. In the southern provinces, Inspruck and Trent are supposed each to contain 10,000 souls. Trieste, which is reckoned at 18,000, deserves more particular attention, having been for a long time the only sea-port belonging to Austria. It is situated on a gulph of the Adriatic and rises on an ascent which is crowned by a castle. The shipping is secured by a wall, extending from the Lazaretto to the isle of Zuka; and the harbour was declared free by the Empress Theresa. The neighbourhood produces excellent wines.

EDIFICES.] The chief public edifices are at Vienna, Buda, and Pesth, but there are many splendid churches and monasteries in the several regions of the Austrian domination. Many of the Hungarian nobility, who have vast estates, possess castles of corresponding magnificence. Among these the chief are the Palesy, Schaki, Erdoby, Sichy, Forgatsh, Kohari, Karoly; but above all Esterhazy, whose castle, about a day's journey from Presburg, is said to rival Versailles in pomp; and seems also to rival that palace in the surrounding desolation, being in a morassy country near the Neusidler lake.[12]

INLAND NAVIGATION.] The utility of inland navigation seems to be little perceived in the Austrian dominions; and even the noble canals in the Austrian Flanders have suffered by strange neglect. The long navigable course of the Danube may, in some measure, apologize for this deficiency; but there is no doubt that the greatest advantages might be derived by opening canals in some of the provinces, particularly towards the Adriatic, and in Hungary.

MANUFACTURES AND COMMERCE.] Nor do manufactures seem to be cultivated to a great extent in any part of the Austrian dominions. Vienna perhaps equals any other of the cities in manufactures, which are chiefly of silk, gold and silver lace, cloths, stuffs, stockings, linen, mirrors, porcelain; with silver plate, and several articles in brass[13]. Bohemia is celebrated for beautiful glass and paper. But the commerce of the Austrian dominions chiefly depends upon their native opulence; Austria Proper and the southern provinces producing abundance of horses and cattle, corn, flax, saffron, and various wines, with several metals, particularly quicksilver from the mines of Idria.

[9] Townson, p. 90.

[10] Hoeck puts Cremnitz at 4000.

[11] Cracow has been declared a free city by the Congress of Vienna. It is the ancient capital of Poland; and is supposed to contain 24,000 souls.

[12] Riesbeck, ii. 49. 66.

[13] Busching, vi. 549. See Hoeck.

Bohemia and Moravia are also rich in oxen and sheep, corn, flax, and hemp; in which they are rivalled by the dismembered provinces of Poland. The wide and marshy plains of Hungary often present excellent pasturage for numerous herds of cattle; and the more favoured parts of that country produce corn, rice, the rich wines of Tokay, and tobacco of an exquisite flavour, with great and celebrated mines of various metals and minerals. The Austrian territories in general are so abundant in the various necessaries and luxuries of life, to be found either in the north or south of Europe, that the imports would seem to be few and inconsiderable. The chief exports are from the port of Trieste, consisting of quicksilver and other metals, with wines and other native products. Dr. Townson [14] gives a table of the exports of Hungary for one year; from which it appears that they consisted chiefly of cattle, hogs, sheep, flour, wheat, rye, wool, and wine, carried to other Austrian provinces; and only about one seventh part sent to foreign countries.

[14] P. 198. Hoeck says, that in the archduchy of Austria there were seven great manufactures of cotton cloth, which occupied 140,000 individuals; and at Lintz a woollen manufactory employed 30,000. The iron manufactures are numerous in Stiria. Bohemia had linen manufactures to the annual amount of 16,000,000 of florins, with some in wool, and cotton. For the others that author may be consulted.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.— Face of the Country. — Soil and Agriculture. — Rivers.— Lakes. — Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters.— Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Austria Proper is commonly mild and salubrious, though sometimes exposed to violent winds, and the southern provinces in general enjoy a delightful temperature, if the mountainous parts be excepted, exposed to the severities of Alpine winter. The more northern regions of Bohemia and Moravia, with the late acquisitions in Poland, can likewise boast the maturity of the grape, and of gentle and favourable weather. The numerous lakes and morasses of Hungary, and the prodigious plains resembling deserts, are supposed to render the air damp and unwholesome, the cold of the night rivalling the heat of the day; but the keen blasts from the Carpathian mountains seem in some measure to remedy these evils, the inhabitants being rather remarkable for health and vigour.

FACE OF THE COUNTRY.] The appearance of the various regions subject to Austria is rather mountainous than level, presenting a striking contrast in this respect to those of Russia and Prussia. Commencing at Bregentz on the lake of Constance, we find chains of mountains, and the Rhætian alps, and glaciers of Tyrol, branching out on the south and north of Carinthia and Carniola. Another chain pervades Dalmatia, and on ascending towards the north Stiria displays chains of considerable elevation. The southern limit of Austria Proper is marked by other heights; and Bohemia and Moravia are almost encircled by various mountains, which on the east join the vast Carpathian chain, which winds along the north and east of Hungary and Transylvania, divided from each other by another elevated ridge: the dismembered provinces of Poland, though they partake in the south of the Carpathian heights, must yet afford the widest plains to be found within the limits of Austrian power.

This ample extent of country is also diversified by many noble rivers, particularly the majestic Danube, and its tributary stream the Tiess, which flows through the centre of Hungary; and scarcely is there a district which is not duly irrigated. The general face of the Austrian dominions may therefore be pronounced to be highly variegated and interesting; and the vegetable products of both the north and south of Europe unite to please the eye of the traveller.

SOIL AND AGRICULTURE.] The soil is upon the whole extremely fertile and productive, in spite of the neglect of industry, which has permitted many parts of Hungary, and of the Polish provinces, to pass into wide forests and marshes. Were skill and labour to assume the axe and spade, those very parts might display the greatest exuberance of fertility. Travellers seldom attend to the important topic of national agriculture; and therefore intelligence somewhat antiquated must be adopted. About the year 1770

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an observer [1] found that Bohemia had suffered considerably by the ravages of war; the wheat was however tolerable, but the barley full of weeds, and exposed by negligence to the inroads of the cattle, who are fed in winter with the cabbage-turnip, and red cabbage, both cultivated in large quantities. The flax seemed particularly to flourish; but the industry of the citizens, farmers, and peasants, was crushed by the overweening pride of the nobility, and the state of the peasantry was little superior to that of Poland. In the warm spots of Bohemia, hops were cultivated, which with the barley formed excellent beer; a chief export of the country. In Moravia the agriculture seemed rather superior, being improved by Flemish farmers. That of Austria was laudable, except that inclosures were wanting. The greater part of Hungary he regarded as a fertile pasturage for sheep; and Flemish manufacturers were employed to improve the wool. Oats were little cultivated in Austria Proper; the other products as usual in England, particularly abundance of cabbages and potatoes; but the cultivation was not neat, small waste spots being left by the plough, which harboured weeds, to the great detriment of the field. The vineyards and fields of saffron were numerous; cattle appeared in abundance; and large herds of swine, the latter feeding all the summer in the woods. At a more recent period, Mr. Coxe [2] gives a deplorable picture of the want of cultivation in the southern provinces of Poland, now subject to Austria, the country being generally overspread with vast tracts of thick gloomy forests, and even from Cracow to Warsaw, a course of about 258 English miles, he only met with two carriages, and about a dozen carts. The country was generally sandy or marshy, and quite devoid of marks of industry: the peasantry were the most miserable and abject that he had ever seen, and would assemble in crowds to implore charity. Such being the case, Austria cannot have made any great acquisition in her Polish provinces; and Prussia had in fact the chief reason to boast of the partition.

Rivers. — Danube.] In enumerating the chief rivers which pervade the Austrian dominions, the Danube commands the first attention. This magnificent stream rises in Swabia; and Count Marsigli has delineated and explained its humble fountains, in his large and curious work on this river. Though the course be occasionally impeded by small falls and whirlpools, yet it is navigable through a prodigious extent, and after watering Swabia, Bavaria, Austria Proper, Hungary, and Turkey in Europe, it joins the Euxine, or Black Sea, after a comparative circuit of about 1300 British miles, about one half of its progress being through the territories of Austria.

Tiess.] Next in consequence is the Tiess, which arising from the Carpathian mountains, towards Buckovina, and bending towards the west, receives many tributary streams from that Alpine chain; and afterwards turning to the south falls into the Danube, not far to the west of Belgrade, after a course of about 420 miles. At Belgrade the Danube receives the Sau, or Save, which forms a boundary between Austria and Turkey, rising not far from Idria in the mountains of Carniola, and pursuing a course nearly equal in length to that of the Tiess. That of the Drau or Drave extends to about 350 miles, from its source in the eastern mountains of Tyrol, till it joins the Danube below Esseg.

Inn.] The Inn rises in the east of Swisserland, from the mountain of Maloggia in the Grisons, being a point of partition dividing the waters which run towards the Black Sea, from those which flow into the Adriatic [3]. This powerful river is more gentle near its source than the other Alpine streams, but soon becomes more precipitous; and joins the Danube at Passau with a weight of water nearly equal to that stream, after a

[1] Marshall's Travels, iii. 304. These Travels are said to have been written by Sir John Hill. I know not if the knight of the polar star travelled in the north or east, but he must have used good materials.

[2] Vol. i. 162, and p. 202.

[3] Coxe's Swiss. iii. 28.

course

course of about 250 miles, being nearly equal to that of the Danube itself at their junction.

MULDA, &c.] The Raab, and the Leytha, intermediate streams between the Drave and the Inn, only deserve a brief mention. The Mulda is a considerable river which rises in the southern mountains of Bohemia, and after running about 50 miles south-east bends due north and joins the Elbe near Melnick, after passing through Prague. The Elbe itself arises in the Sudetic mountains between Bohemia and Silesia, and waters a great part of the former kingdom before it enters Saxony, bending its course north-west towards the German ocean. The Morau, whence Moravia derives its name, also arises in the Sudetic mountains; and passing by Olmutz joins the Danube not far to the west of Presburg.

LAKES.] The lakes in the Austrian dominions are numerous, and some of them of considerable size. Bohemia presents a few small pieces of water, towards its southern boundary: but on entering Austria Proper, the lake of Traun, the Ebernsee, and others, are of greater extent. Carinthia contains a large central lake not far from Clagenfurt; and Carniola another, the Cirknitz See. Hungary contains many morasses and lakes; the most important of the latter being that of Platte, or the Platten See, extending about 45 British miles in length, by eight in breadth, and abounding with fish. The Neusidler lake, about thirty miles south-east of Vienna, is about thirteen miles in length by four in breadth. It is almost surrounded by fens; and is chiefly remarkable for being in the vicinity of Eisenstadt, the princely residence of the family of Esterhazy. On the east of the Tiess is the lake of Palitzer, about eight miles in length. In Transylvania is the Tsege To; and many small lakes are situated amidst the Carpathian mountains.

MOUNTAINS.] In considering the various elevated chains which diversify the Austrian territories, considered in their former extent, the description shall begin with the western extremities and terminate with the eastern. In this point of view the Rhætian or Tyrolese Alps will claim the first attention. These chiefly proceed in a direction from the south-west to the north-west, or from the Valteline to the archbishoprick of Salzburg. This, Saussure has observed, is the general course of the Alpine chains[4]. The Brenner mountains, for such is the modern name of the Rhætian Alps, rival the grand Alps of Swisserland in numerous glaciers; and like other grand chains present exterior barriers, that on the north being distinguished by the name of Spitz, while that on the south is termed Vedretta[5]. On leaving Italy there is almost a gradual ascent, from Trent to the highest summit. The primitive or greatest elevations arise to the north of Sterzing, whence streams proceed towards the river Inn on the north and the Adige on the south, and the Eisac descends, a precipitous torrent, amidst masses of granite, petrosilex, and marble, while the avalanches become dangerous to travellers. "The naked and rugged peaks of the mounts Lorenzen, Fartschel, and Tschafatfeh, raise their towering heads towards the north-west, and on the south-east are those of Glander, Schloss, Pragls, and Pallanser. Their summits are entirely bare; and seem to be composed of granite." The glacier most easy of access is that of Stuben, the centre of which presents many Alpine plants; and the granite and porphyry are frequently covered with calcareous stone. The glacier of Stuben is 4,692 feet above the level of the sea, and presents the usual phænomena of such scenes, with beautiful pyramids of azure, which in sunshine reflect a blaze of light. The mountain specially called Brenner is, according to Beaumont, only 5,109 feet above the sea. The town of Stemach is placed nearly in the centre of the Tyrolese chain: towards the east from the midst of a long course of glaciers

[4] Vol. viii. 241.

[5] Beaumont's Rhæt. Alps, London, 1792, fol. p. 37, &c

running

running north-east and south-west rises the grand mountain Gefrorn, a mass of granite covered with eternal snow, and one of the highest peaks of the Rhætian Alps; on the west is Habichspiz, of smaller height; but to the south-west is Tributaan, another stupendous peak of the great Brenner chain. The Bock-kogo is another vast peak, rising little inferior to Gefrorn, and in the same latitude, but towards the west [6].

Towards the west and north of Inspruck are several detached mountains, covered with constant snow; among which those of Verner * are the most remarkable. Near the glaciers are found rock chrystals of various colours, vulgarly called rubies, emeralds, &c. and the inferior ranges of the Tyrolese mountains contain mines of silver, copper, lead, mercury, iron, alum, and sulphur. In the vale of Zill is a mine of gold, which barely defrays the expence and labour. Towards the south the mountains are rich in wood and pasturage; but the northern hills are bleak and barren. The inferior mountains are, as usual, calcareous, or argillaceous; but those of Verner are granitic. The Tyrolese Alps being seldom visited by travellers, it was judged proper to give rather an ample description.

ITALIAN CARNIC.] The provinces of Carinthia and Carniola present many considerable chains of mountains; as that of Lobel which separates these countries; and the Julian, or Carnic Alps, (now called Birnbaumer Wald,) which divide Carinthia from Italy. Carniola is chiefly mountainous, and many of the summits are covered with lasting snow; the most memorable are the Kalenberg near the river Save, and Runbeig, and the Karst to the south of Idria. Here also terminates the vast chain, which proceeds by the north of Dalmatia towards the Hæmus, and is known by many local appellations, as Mount Promina near Gnin, Mount Prologh, Mount Clobu, &c. &c. but better distinguished by the title of the Dalmatian chain. The latter mountains are chiefly calcareous [7].

Returning towards the north, first occurs the chain of Bacher, in the south of Stiria; mount Grasan on the east of Judenburg; and the chief mountains in this province, those of Grimin, in its western extremity towards Salzburg. On the east towards Hungary this country is more plain and fertile.

AUSTRIA.] On the south of Austria is a chain of inconsiderable elevations. Busching supposes that the ancient Cetius is a ridge extending from near the source of the river Save, towards the Danube, about nine British miles on the west of Vienna, where it is called Leopoldsberg [8]. The general name is the Kalenberg; but parts of it go under particular denominations, as Caumberg, Annaberg, Saurussel, Teufelstaig, Golach, Schneeberg, &c. and it is certain that the Cetian chain of Ptolemy runs in that direction †. However this be, Upper Austria, or the western part of this province, contains many considerable mountains, the highest of which is in the maps called Priel, but the proper name is Gressenberg. Towards the north Austria is divided from Bohemia by a ridge of considerable elevation, which passes to the north-east of Bavaria. On the north-west, Bohemia is parted from Saxony by a chain of metallic

[6] Beaumont's Rhæt. Alps, 59. The Brenner, or burning hill, is so called on account of the frequent thunder storms. Ib. 65. The Glockner and Ortels are computed at 11,500 feet. In the archbishopric of Salzburg the Hoch-horn at 10,663. Monthly Mag. ix. 539.

* Busching, vii. 84. says Ferner is merely a Tyrolese term for a glacier.

[7] Fortis's Dalmatia.

[8] Busching, vi. 527-8. The ridge of Kalenberg was the western boundary of Germany till about A. D. 1040, when it was removed east to the river Leithe. Putter, i. 155. Cassini, in his Voyage en Allemagne, p. xxiii. observes, that the mountains of Kalemberg, on the west of Vienna, are well known by the route of the Bavarians who marched to defend that capital against the Turks.

† The Semmering heights divide Austria from Stiria; and a noble road was formed over them in 1728. The Lobel, between Carinthia and Carniola, is passed by a singular excavation through a summit. Brown, 125.

mountains, called the Erzgeburg, a word that implies hills containing mines. On the west of the river Eger, near its junction with the Elbe, stands the mountainous group of Milessou supposed to be the highest in the province *. On the north-east, the Sudetic chain, which branches from the Carpathian, divides Bohemia and Moravia from Silesia and the Prussian dominions.

CARPATHIAN MOUNTAINS.] The Carpathian mountains, that grand and extensive chain which bounds Hungary on the north and east, have been celebrated from all antiquity. By the Germans they are styled the mountains of Krapak, probably the original name, which was softened by the Roman enunciation: the Hungarians, a modern people, call them Tatra. This enormous ridge extends in a semicircular form from the mountain of Javornik, south of Silesia, towards the north-west: but at the mountain of Trojaska, the most northern summit, it bends to the south-east, to the confines of the Buckovina, where it sends forth two branches, one to the east, another to the west of Transylvania: which is also divided from Walachia by a branch running south-west and north-east. The whole circuit may be about 500 miles. Dr. Townson visited these Hungarian Alps from the vicinity of Kesmark, first proceeding to the Green See, a lake amidst the mountains, passing through forests of firs, which were succeeded by rocks of limestone and granite. The Krumholz, a kind of tree resembling the pine, but feathered with thick branches to the very ground, somewhat impede the progress. He computes that the Kesmark peak, which towards Hungary is a perpendicular rock, may be about 8508 feet above the level of the sea. He afterwards proceeded to the Lomnitz peak, which he says is the highest of the whole Carpathian chain, and placed towards its centre: yet he afterwards expresses some doubt whether it be not rivalled, if not exceeded, by the Krivan, situated more towards the west, 20° 45′ of east longitude from London [9]. The summit of Lomnitz he attained with some difficulty, and computed it to be 8640 feet above the level of the sea, not much above half the height of M. Blanc, or M. Rosa. He found it composed of grey granite like the rocks at the bottom; but with a small mixture of a greenish black earthy substance; yet the vegetation consisted of little except a few lichens. Those peaks are seldom visited except by the hunters of the chamois, and some idle adventurers, who search for gold and precious stones. The marmot also appeared; but our intelligent author denies that the ibex, or rock-goat of the Swiss Alps, is found in the Carpathian heights. The Krivan he afterwards ascended with more ease, but found it inferior in height to the Lomnitz, being 8343 feet above the sea. It is probable that summits of greater elevation arise in the eastern part of the chain; but there are no glaciers, nor other tokens of the eternal winter of great altitude.

The Carpathian ridge occasionally branches towards the north and south; in the former direction the most remarkable are the hills on the west of Silesia, those which adjoin to the salt mines of Wieliczka a few miles south-east from Cracow in Poland, and those which extend through part of the Buckovina. Towards the south a branch stretches from the centre of the chain towards Tokay; and there are other branches not accurately defined, which descend in the same direction from the eastern circuit. Among the detached mountains of Hungary may be named those of Matra in the centre of the kingdom, about 50 miles north-east of Buda: those of Fatra north-east of Cremnitz: of Avas in the district of Marmaros: Farkas to the south of Nemethi.

* Busching, vi. 126. The Donnerberg, near Milessou, is regarded as the highest mountain in Bohemia. The summit of the Reisengeberg is free from snow in summer, and probably not above 6000 feet high. See Riesbeck, ii. 149.

[9] Townson, 358. 363.

The mountains of Transylvania are numerous, besides the two branches of the Carpathian chain, which may be regarded as enclosing the country. The Bannat of Temeswar also presents many ridges of considerable height.

FORESTS.] To enumerate the forests in the Austrian dominions would be a task at once laborious and fruitless. Suffice it to observe that numerous and extensive forests arise in every direction, particularly along the Carpathian mountains, and in the provinces acquired from Poland. Even Bohemia was formerly remarkable for a forest of great extent, a remain of the Hercynia Sylva of antiquity, which extended from the Rhine to Sarmatia, from Cologne to Poland. The Gabreta Sylva was on the south-west of the same country, where a chain of hills now divides it from Bavaria.

BOTANY.] The states which compose the powerful and extensive empire of Austria have been surveyed with very different degrees of accuracy as to their natural productions. While the botany of Austria Proper has been carefully illustrated by Jaquin *; and that of Carniola by Scopoli † and Hacquet ‡; the flora of Hungary is still very imperfect; and the late acquisitions in Poland by the last and former partitions are as yet in a manner unknown to natural history. The general mild temperature of the Austrian states, their variety of soil and situation, from the lakes and rich levels of Hungary, to the snowy summits of Istria and Carinthia, are a sufficient evidence of the richness of their flora; each year it is augmented by the discovery of new species, and will doubtless long continue to be increased by the investigations of future botanists. We shall follow the plan to which we have hitherto adhered of enumerating, as far as our narrow limits will allow, the principal vegetables, natives of Austria, which for their beauty or use merit particular notice; of these it will be found that a large proportion have been admitted into our gardens, and many more, from the elegance of their form, or glow of colour, have an equal claim to domestication.

Of the natural order of the *Ensatæ*, distinguished by their compressed sharp sword-shaped leaves, several species are found wild in the Austrian dominions, among which may be distinguished five species of iris, the *corn-flag*; and *branched spiderwort*; all of which have been naturalized in our gardens.

The bulbous-rooted plants of the order Hexandria of Linnæus, remarkable, for the most part, for the beauty of their flowers, and abounding most in the warmer climates, occupy a conspicuous rank in the flora of Austria: a long list of these might be produced, but we shall select only the principal: these are the *tufted* and *clustered hyacinth*; the *spring*, *summer*, and *autumn snowflake*; allium victoriale, one of the most stately and ornamental species of the large genus *garlic*; *orange lily*; *martagon lily*; *turncap lily*; *dog's tooth violet*, one of the earliest beauties of the spring; *chequered daffodil*; *branched asphodel*; *yellow* and *tawny day-lily*; and lastly, though perhaps superior in beauty to any of the preceding, *white* and *black hellebore*.

For the class syngenesia, or the compound flowered, though it contain many species that are natives of Austria, yet as these are for the most part plants of little use, and as little remarkable for their beauty, a ſhort notice will suffice: the most interesting of these to the general reader are arnica montana, used in medicine; carduus mollis and canus, *ſoft* and *hoary thistle*; *purple scorzonera*; senecio abrotanifolius, *southern-wood-leaved ragwort*, with somewhat hoary finely divided-leaves and large bright yellow blossoms; artemisia Austriaca, *Austrian southernwood*; and xeranthemum annuum,

* Flora Austriaca. † Flora Carniolica. ‡ Plantæ Alpinæ Carniolicæ.

a pretty plant, an inmate of our gardens, whose radiated purple and white flowers, if gathered when fully blown and kept in a dry place, will retain their beauty the whole winter through.

Of the sedums and their kindred genera it will be sufficient to mention two species of singular beauty, the sempervivum hirtum, *hairy orpine*; and S. moritanum; of these the latter is by far the most elegant plant of its tribe.

To the class decandria belong several interesting plants, of which the following are most worthy of mention; *alpine* and *maiden pink; fraxinella;* and three species of rhododendron, the hirsutum, chamæcistus and ferrugineum, all of which merit distinction in a genus, every species of which is more than commonly beautiful.

The umbelliferous plants of Austria, as well as those of every other European country, are very numerous; the following are the larger species and the most characteristic, Selinum Austriacum; Heracleum Austriacum; Peucedanum Alsaticum; Ligusticum Austriacum; and L. Peloponnesiacum.

The Linnæan class pentandria contains the most beautiful of the indigenous plants of the Austrian dominions, several of which have found their way into our gardens. The moist and spungy sides of the mountains from the Carpathian chain to the heights of Istria are adorned by the soldanella alpina and aretia alpina, two minute but exquisitely beautiful plants, the former with purple, the latter with white and flesh coloured blossoms. Among the numerous species of flax, the following very elegant ones are natives of Austria: *hairy flax; yellow flowered f.; Austrian f.*, with large deep-blue blossoms. The rest of this class that require notice are, cerinthe major, *greater honey wort*; verbascum phœniceum, *purple mullein;* gentiana acaulis, *stemless gentian*, distinguished by its large erect blue bell-shaped blossom, rising immediately from the centre of the leaves; gentiana Pannonica, the most splendid of the whole genus, growing to a considerable height, and bearing its large purple-dotted blossoms in tufts on the top and sides of the stem: the Austrian flora is also graced by several species of primula; by the cyclamen europæum; campanula thrysoidea, remarkable for its pale yellow blossoms; physalis alkekengi, *winter cherry;* and asclepias vincetoxicum, *swallow-wort*.

Of the papilionaceous plants may be enumerated the *greater laburnum*, a tree of some magnitude, adorning the banks of the Danube with its long clusters of golden blossoms; and coronilla coronata, distinguished by its glaucous leaves, and its bright yellow blossoms.

Several remarkable plants, inhabitants of the Austrian dominions, arrange themselves under the Linnæan class polyandria; among these may be distinguished two species of Adonis or *pheasant's eye*, the a. miniata and flammea, adorning the fallows with their scarlet petals; *alpine poppy*, remarkable by its snow-white flowers; *mountain* and *narcissus-leaved anemone; bears'-foot hellebore; Christmas rose;* and *winter aconite; white flowered mountain ranunculus;* potentilla nitida, conspicuous for its beautiful flesh-coloured petals, and its glaucous leaves: atragene alpina, adopted into our flower-gardens; and four species of aconite or monks-hood, of which the A. cammarum is the largest and most showy of the whole genus; the sacred *lotus* of Eygpt and India, has also of late been found in some lakes in Hungary.

The perennial shrubby plants may be divided into the flowering shrubs, the fruit-bearing and the forest trees. Of the former class some, as the laburnum, have been already mentioned, the rest with the exception of erica carnea, *flesh-coloured heath;* syringa vulgaris, *lilac*; and tamarix Germanica, *German tamarisk*, are scarcely interesting, except to botanists. The common fruit-trees of Europe are largely cultivated in the provinces of Austria, but their list of native fruits is very scanty. The forest trees, besides those which are common to all Europe, are loranthus europæus;

quercus cerris, *prickly-cupped oak; sumach; walnut; chestnut; hornbeam*, and carpinus ostrya.

Zoology.] The domestic animals in the Austrian dominions are commonly excellent, particularly the cattle. According to a late traveller[10] the Hungarian horses have been erroneously estimated from the spirited cavalry supplied by other regions, while the native breed is very small, and the stallions and brood mares are foreign. Many of the native horses run wild, and are sold in great numbers at the fairs, before they have suffered any subjection. The breed of cattle is mostly of a singular colour, a slaty blue; and the Hungarian sheep resemble the Walachian in their long erect spiral horns, and pendent hairy fleece. In the western parts of the Austrian sovereignty, the animals do not seem to be distinguished from those of other parts of Germany.

The large breed of wild cattle, called Urus or Bison, is said to be found in the Carpathian forests, as well as in those of Lithuania and Caucasus. Among the ferocious or wild quadrupeds, may also be named the bear, the boar, the wolf, the chamois, the marmot, and the beaver. Among the larger birds, the bustard and pelican are some of the most uncommon; and Carniola produces the strix sylvestris, the tetrao nemesianus, the sturnus collaris, the emberiza barbata and brumalis, the motacilla of three uncommon kinds, the hirundo rupestris, the ardea alba, the mergus æthiops, three kinds of the larus, and the anus subterranea[11]. Even Austria claims some birds rather peculiar, as four uncommon kinds of the falcon, the strix sabaurita, the motacilla dumetorum, the parus pendulinus, the pratincola krameria, and perhaps others. The Danube also boasts of some fishes seldom found in other rivers, among which is a small and delicate sort of salmon. To enumerate uncommon insects would be too minute a labour for the design of the present work; but for those of Hungary the travels of Dr. Townson may be consulted.

Mineralogy.] The mineralogy of the Austrian dominions being by far the most various and interesting of any in Europe, it will be proper to consider it with some attention. There is scarcely a province of this extensive territory, from the frontiers of Swisserland to those of Turkey, which cannot boast of advantages in the mineral kingdom; and as it were by a destiny attached to the house of Austria, even the acquisitions in Poland contain one of the most remarkable mines in Europe, the saline excavations of Wielitska. To begin on the north-west and afterwards pursue the description towards the south and east, the mines of Bohemia have been celebrated from ancient times[12]. Silver is found at Kuttenberg, and at Joachimsthal, on the western frontier towards Saxony, probably a continuation of the veins of that country: this mine was discovered in 1516, and next year were struck from it the crowns of Joachim. Other places of this province also produce this precious metal: and gold has been discovered at Keonstock. One of the most singular products of this province is tin, which is found at Zinwald (that is the tin forest), also on the frontier of Saxony, near Krauppen, at Schlakenwald or Slauka, a few miles to the north of Carlsbad, and at Lauterbach and Schoenfeld in the same district; so that this metal is restricted to the western part of Bohemia: where is also found, at Dreyhacken, a mine of very pure copper. Lead occurs at Bleystadt, or Pleystadt, in the same quarter; and Busching reckons quicksilver among the products of Bohemia, along with iron, magnet, alum, sulphur, vitriol, terra sigillata, talc, and coal. But the precious stones which he mentions seem to be only coloured crystals. The garnets of Bohemia are however among the most beautiful of the kind. They are chiefly found in clay, mingled with mica, at Meronitz in the mountain of Stiefelberg, whence they are carried to Bilen[13]. There are other mines of garnets in the same region, on the west of the highway leading from Prague to Dresden, where

[10] Townson, 230. [11] Pennant, Brit. Zool. ii. Appen.
[12] Busching, vol. vi. 126. French edit. 8vo. [13] Journ. des Min. No. iv. 36.

they

they are found with balls of basalt formed of concentric layers, and some jacinths and chrysolites. The women wash the clay in which the garnets are found; after which they are sifted and arranged according to size; and sold by the pound weight from about three to ten shillings. Many workmen are occupied in cutting and piercing them, for necklaces, and other ornaments: they are polished in facettes, with emery on a piece of freestone, and pierced with a small diamond. This branch of commerce is of great antiquity at Carlsbad, and at Walkirk in Swabia, where twenty-eight mills are occupied in this article only.

Nor is Moravia destitute of mineralogic advantages, producing not only iron in great abundance, but alum, sulphur, and saltpetre. Gold was formerly found in the district of Znoyn or Znain: and silver was lately worked in that of Iglau, both on the confines of Austria[14].

The fertile archduchy of Austria displays few minerals, though there be mines of gold near the abbey Goettwig, and of alum near Krems: saltpetre is however prepared in abundance; and at a little distance from St. Annaberg, near the frontiers of Stiria, a rich mine of silver was opened in 1574. The southern provinces of Stiria, Carinthia, and Carniola, afford many important minerals. The iron of Stiria supplies the finest steel, and great quantities are imported into England: it is chiefly found at Eisenerst and Vorderberg; the former, in the district of Ensthal, so called from the river Ens, were discovered in the year 1712; and the others are in the same quarter[15]. There are considerable lead mines near Pegau on the river Mohr, yielding about 5000 tons yearly; and at Zeyring were silver mines under water since the year 1158. Stiria also affords coal at different places; not to mention minerals of mere beauty or curiosity, among which may be named the singular blue granite, which is found at Kruglah, or Kriglach, about twenty miles to the east of Bruck[16].

On the east of Stiria extends the duchy of Carinthia, also yielding excellent iron, the mines of Friesach on the north, being particular famous, as well as those near the sources of the Lyser. In the neighbourhood of Villach, at Bleyberg, are found rich lead mines; and the same place supplies what is called fire-marble or lumachelli.

Carniola, or Krain, abounds with immense caves, and other natural curiosities: but except a few iron works, the mineralogy is little remarkable. On the west, towards the county of Gorz, which produces excellent wines, lies the Ban of Idria, a district immediately subject to the chamber of Inner Austria at Gratz. The quicksilver mines of Idria are celebrated in natural history, poetry, and romance. They were discovered in the year 1499; and the hill of Vogelberg has annually yielded more than 300,000 pounds weight of mercury. The common ore is cinnabar; but sometimes the pure quicksilver runs through the crevices. Idria is surrounded with woody hills; and the Vogelberg on the east, produces oaks and broom, while the interior consists of red clay, calcareous rock, and a black soft slate, which covers the metallic vein in a southern direction. The deep descent is by ladders, and stairs of stone; and the length of the galleries is computed at 316 paces, or 1580 feet[17]. The operations in these vast mercurial caverns being pernicious to the health, are sometimes allotted as a punishment to criminals.

On passing into Tyrol several mines occur of ancient reputation, such as that of silver and lead near Lermos; and in the same quarter those of Nasereit in the Verner mountains, about 30 miles north-west of Inspruck, which are opulent in silver, copper, lead,

[14] Busching, vi. 420.

[15] Ferber's Italy, p. 5.

[16] M. Jars, in his *Voyages Metallurgiques*, Paris 1774-1781, three volumes 4to. supposes, I. 32, that the *flos ferri* of stiria originates from the limestone, of which all the mountains around the mine are composed.

[17] Scopoli Tentamen de Minera Hydrargyri. Journal des Mines, No. xxxvi. Sargent's Mine, &c.

and iron[18]. Nor is the southern region of Trent wholly destitute of mines. It may be proper to remark that some curious productions have been ascribed to Tyrol, which really belong to the archbishopric of Salzburg, Zillerthal, in particular, being in the latter province.

But the principal mines in the Austrian dominions are situated in the eastern provinces of Hungary and Transylvania. About 40 miles to the south of the Carpathian hills are the gold mines of Cremnitz; and 20 English miles further to the south, the silver mines of Shemnitz; cities which have risen solely from these labours, and thence called mining towns. Shemnitz is esteemed the principal; and the ores are found in what Baron de Born styles metallic rock*. The academy here instituted for the study of mineralogy is highly respectable, and only rivalled by that of Freyberg in Saxony. The mines of Cremnitz also produce some silver. Hungary contains mines of copper at Schmelnitz and Herrengrund, of antimony very rich at Rosenau; and in different parts of coal, salt, and alum. Saltpetre is also produced in considerable quantities: and natron or soda is found in a lake near Kismaria, towards the frontier of Transylvania[19]. Such lakes are commonly white from the soda floating on the surface. But a mineral peculiar to Hungary, and as yet discovered in no other region of the globe, is the opal, a gem preferred to all others by the oriental nations. The opal mines are situated at Czerweniza, a short day's journey to the north of Kaschaw, and nearly under the same latitude with Cremnitz. The hill in which they are found consists of decomposed porphyry; and they only occur at the distance of a few fathoms from the surface, of various qualities, from the opake white, or semi-opal, which is also discovered in Cornwall, to that utmost effulgence of iridescent colours which distinguishes this noble gem†.

The mines of Transylvania and the Bannat are also numerous and valuable. Those of Najiag, 12 British miles to the north-east of Deva, were pretended to be discovered by a peasant, who said that he had observed a light shining in the evening over the spot. They produce the grey gold ore, being that precious metal mingled with antimony, arsenic, lead, and iron, and sometimes with manganese and zinc[20]. They are

[18] Beaumont, 77. Ferber, 329. Tyrol is mentioned for the sake of connection, being now subject to Bavaria.

* The Saxum metalliferum is, according to the account of Lefevre, who visited these mines in 1788, (J. des Min. No. xii. p. 39—50) a porphyry, of white felspar and black mica in rose-coloured jasper, too soft to be polished. Mr. Esmark, a disciple of Werner, who visited them in 1796, (Ib. No. xlvii.), says the basis is felspar passing to hard clay, containing crystals of hornblende, black mica, and sometimes of quartz. Mr. Kirwan describes it as dark green, rarely reddish; but Dr. Townson's account indicates grey with white spots, and he says that Baron de Born might have recognised it in that yellowish grey substance the usual adjunct of opal.

The Baron de Born has himself settled the question in his Travels in Hungary, or, according to the English translation, in the Bannat. He says, p. 54, that the *saxum metalliferum* is by the miners called sand-stone; and, p. 123, he says that "grey argillaceous rock, mixed with mica, schorl, or quartz grains, which I have presumed to call *saxum metalliferum*." In p. 153. a white argillaceous compact stone is said to resemble *saxum metalliferum*: and p. 189. an argillaceous grey rock is pronounced to differ from this only by having spots of white lithomarga instead of mica. In his *Lithophylacium* he is equally explicit, (*Ind. Fossil.* 154. 155.): and Gmelin in his edition of Linnæus (Lyons, 1796, iii. 230.), has thence justly described this curious rock, "*ex argilla quartzi crystallallis et aliis . . . albus, albidus, cinereus, cæruliferus.*" It is the common gangart of Hungarian gold.

Riesbeck asserts that these mines would be far more productive if they were farmed out by the crown.

[19] Journ. des Min. No. ii.

† It would appear that the opal of the ancients came from India, or rather Ceylon, and was of an olive colour with a red reflection. Launay *Mineralogie des Anciens*, Brussels 1803, two vols. 8vo. i. 130.

A carbonated substance, like black lead, passes through a vein of opal in Hungary. See Linnæus by Gmelin, the Lyons edition 1796, p. 285. Hence, probably the black opals, which are however extremely rare.

[20] J. des Min. No. xlvii. Esmark.

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the richest in all Transylvania, and conducted with the greatest care and exactness. At Ofenbanya, about 25 British miles to the north of Karlsburg, is found the white gold ore, which also occurs in the hills of Fatzebay, in the same quarter. The country towards the west of Karlsburg presents numerous gold mines near Zalathna: and in the north of this province are those of Kapnick, Rodna, Felsobanya, and others. Mr. Esmark also mentions those of Verospatak, Kirnik, and Boitza, but some are exhausted. At Ohlapian, not far from Zalathna, is found the finest gold in Transylvania, mingled with gravel and sand. The chief mining town of the Bannat is Orawiza, on the west of a chain of mountains, consisting of micaceous schistus, granite, and metallic rock; between which and Buda are chiefly plains of sand. Towards the south of Orawiza are found mines of copper: and gold and silver at Dognaska to the north.

The salt mines acquired from Poland alone remain to be described. They are situated, as already mentioned, at Wielitska, eight miles to the south of Cracow, being excavated at the northern extremity of a branch of the Carpathian mountains. The descent is by pits of great depth; and the galleries and chambers are of immense size, commonly supported by timber, or by vast pillars of salt, out of which material even subterraneous chapels are formed; but travellers have idly exaggerated the splendour and extent of the saline apartments[21]. The miners work by intervals of eight hours; after which they are drawn up, and their places supplied by others. The revenue arising from these mines was computed at near 100,000l. sterling yearly: but it has considerably declined since they became subject to Austria. The salt is of an iron grey colour, sometimes intermingled with white cubes; and sometimes large blocks of salt appear imbedded in marl[22]. The purest sort is found at the bottom of the mine, and is sparry. The mines extend about 3600 feet from east to west, and about 200 from south to north. The salt is of the same identic kind with that found in Marmaros, on the other side of the Carpathian chain, or indeed throughout Transylvania, which contains a great number of salt mines, though not of considerable extent.

MINERAL WATERS.] The mineral waters in the Austrian dominions are very numerous, as is to be expected in a country so mountainous, with the exception of the great plain in the west of Hungary, extending upwards of 250 miles in every direction. To instance a few; Tyrol presents those of Sellrain, Meran, Sexten, Prax, Agums, Brutz in the upper valley of the Inn, Trasp, Rabi, Pei, and others. In Stiria there are several; nor are Carinthia and Corniola destitute of this advantage. Austria Proper presents those of Baden; and Bohemia those at Carlsbad, Toeplitz, Agra, and Desny. Mineral springs abound in Hungary, as at Gran, Buda, Groswardin, where the hot baths are frequented by the neighbouring Walachians. In the north are those of Rank, Bertfeld, and others.

NATURAL CURIOSITIES.] Among the natural curiosities may be named the grand Alpine scenes of Tyrol, the glaciers and peaks of the Brenner. At Gannowitz in Stiria is a fountain whose waters are said to be warm in winter and cold in summer: a common error, the deception consisting in their preserving the same temperature. The calcareous hills of Carinthia afford many singular scenes; which are however exceeded by those of the Carnian Alps, or Birnbaumer mountains, of Carniola. In the latter country, near Adlsberg, is said to be a grotto of prodigious extent, displaying spaces sufficient for the erection of villages, and containing natural amphitheatres, bridges, &c.[23] Near the entrance the river Poig, which rises at about a mile distant, throws itself into the hollow of the rock, and passes under the grotto, which was perhaps the ancient course of the river. The grotto of St. Mary Magdalen, in the same

[21] Coxe's Pol. i. 200. [22] Townson, 388. [23] Busching, vii. 60.

district,

district, is remarkable for beautiful pillars; and that of Lueg for extent and the variety of stalactitic figures. Nor is that near St. Serf unworthy of notice. But the chief natural curiosity of Carniola is the lake of Cirknitz, called by Dr. Brown the Zirchnitzer See. That traveller informs us that it is about two German, or more than eight English miles in length, by four of the latter in breadth. In the month of June the water descends under ground, through many apertures at the bottom; and in September it re-ascends with considerable force; thus yielding rich pasturage in summer, while in winter it abounds with fish. The calcareous hills and islands of Dalmatia contain similar curiosities; as the lake Jesero in the isle of Cherso, which only diffuses its waters every fifth year[25]; several curious caverns; and prodigious quantities of fossil bones, of horses, oxen, sheep, &c. but doubtful if any be human; nor have any decidedly such been discovered in any region of the globe. Austria, Bohemia *, and Moravia, display few natural curosities; but those of Hungary are numerous, besides the Alpine scenes of the Carpathian mountains. There is a cavern of prodigious extent near Szadello, about thirty British miles north-west of Kashau[26]. It is, like all the other large caverns, in a hill of limestone; and is so crowded with large pendent stalactites as to become a dangerous labyrinth. Near Szalitze, in the same quarter, is another renowned cavern, which, like that mentioned in the account of France, contains a small glacier. At Demanovo, about sixteen British miles to the east of Rosenberg, is another remarkable cave, containing many bones of wild animals which have taken shelter there, as not unusual in the caves of Germany.

[25] Fortis, 429.

* Near Trautenau is a most singular assemblage of natural towers of stone, from 60 to 150 feet in height. This stony forest is of great extent, and is by some supposed to be the skeleton of a hill. Riesbeck, ii. 148.

[26] Townson, 313.

PRUSSIAN STATES.
NORTH SEA
BALTIC SEA
CATTEGAT
SWEDEN
DENMARK
Copenhagen
Funen
Zealand
Bornholm
Femeren
HOLSTEIN
MECKLENBURG
Hamburg
Lubeck
Bremen
Oldenburg
Groningen
E. FRIESLAND
Embden
Aurick
Munster
Cleve
Gelder
Wesel
Hanover
Brunswick
Magdeburg
Berlin
ALTEMARK
MIDDLE MARK
UCKER MARK
PRIGNITZ
Perleberg
Stendal
Wittenburg
Cottbus
Halle
Mansfeld
Merseburg
Cassel
MARK
Meigerzhagen
Weimar
Altenburg
Dresden
Freyberg
Leutmeritz
Prague
BOHEMIA
Marburg
Coblentz
Francfort
Mentz
Trier
Manheim
Bamberg
Bayreuth
Wurtzburg
Erlangen
Nurenberg
Ansbach
Ellingen
Seltenheim
Regensburg
Pilsen
Tabor
Budweis
Olmutz
MORAVIA
Brunn
Carpathian Mts
Cracow
Lublin
Chelm
NEW GALICIA
WEST PRUSSIA
EAST PRUSSIA
Ermeland
KONINGSBURG
Dantzic
Marienwerder
Graudenz
Culm
Thorn
Bromberg
NETZ DISTRICT
Unowraclaw
Gnesen
Posen
Kostrzyn
SOUTH PRUSSIA
Silesia
Glogau
Kalish
Petrikau
Sterad
Lodz
Rawa
WARSAW
Praga
Brzesc
Plock
Pultusk
Ostrolenka
Lomza
Grodno
Kowno
Wilna
Polotsk
Witepsk
Mohilow
Smolensko
Minsk
Pinsk
Volhynia
Podolia
Kiow
Ukraine
Cherson
Ochakow
Crimea
Caffa
Azoph
Sea of Azoph
Black Sea
Constantinople
Bosphorus
Sea of Marmora
Dardanelles
Archipelago
Smyrna
Natolia
Aleppo
Tripoli
Damascus
Jerusalem
Gaza
Egypt
Cairo
Alexandria
Nile R.
Red Sea
Mecca
Arabia
Persian Gulf
Bassora
Bagdad
Mosul
Diarbekir
Armenia
Georgia
Mingrelia
Circassia
Caucasus Mts
Caspian Sea
Astrachan
Volga R.
Don R.
Tartary
Persia
Ispahan
Shiraz
Gombroon
Ormus
Candahar
Cabul
Indus R.
Delhi
Agra
Lahore
Multan
Moultan
Sindy
Indian Ocean
Longitude East from Greenwich

PRUSSIA.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

THIS kingdom, which only commenced with the eighteenth century, has by gradual accessions become so extensive, as deservedly to rank among the first powers of Europe. The dominions of Prussia were small and scattered, till the acquisition of Silesia, and afterwards of a third part of Poland, gave a wide and stable basis to the new monarchy.

NAMES.] This region was faintly known to the ancients, who mention various tribes that possessed it: and the amber, which here only was found in such quantities as to form a regular article of commerce, greatly contributed to its celebrity. But antiquarian disquisitions are foreign to the present purpose; and it will be sufficient to observe that the name of the country originates, according to some, from the Pruzzi a Slavonic tribe; but more probably, according to others, from the name of *Russia*, and the Slavonic word *Po*, which signifies near, or adjacent. Thus the Polabæ were confessedly so called, because they were situated upon the Elbe, which is called Labe

in the Slavonic dialect. Helmoldus[1], who wrote in the twelfth century, and is the most ancient chronicler of these regions, mentions the Pruzzi, or Prussians, among the chief Sclavonic tribes: nor is the name unknown to Adam of Bremen, a writer of the preceding century.

EXTENT.] After having suffered great reverses during the late calamitous war, Prussia has resumed her ancient splendour, and has increased her territories at the expence of Saxony and other states, so as to approach the frontiers of France by the establishment of the Grand Duchy of the Lower Rhine. The whole length exceeds that of Great Britain, and the breadth in some parts corresponds. But of this wide dominion the more ancient possessions may be called the sandy desarts of Germany, and the great King Frederic had reason to propose as an enquiry physical and metaphysical, "Why has God created sand?"

The territories of Prussia are minutely delineated in the twenty-third, twenty-fourth, and twenty-fifth articles of the congress of Vienna, to which the reader is referred, if he prefer the patience of perusing half a dozen pages of dry names to the preferable celerity of consulting a good map.[2] In that celebrated act territories are often computed, not by natural limits, but by the number of souls, that is of bipeds without feathers, who creep about on such a territory. This *statistical* plan may be regarded as the ultimate degradation of human nature, by the slaves of the despotic governments of Germany: and it is expected that some new inventor will favour the world with maps of souls. It is the spirit and patriotism of a country, and not the number of inhabitants which weigh in the page of history and the scale of national merit and celebrity. Alexander did not command a tenth part of the souls that were slaves of Darius. Scotland for four centuries maintained her independence with a million of souls, against England which had seven millions. Recent events have shewn that there is more soul in Swisserland than in all Germany, and in England than in all Europe. So much for the grand revolution, which, as has been observed, began with counting heads, and ended with counting souls.

These new acquisitions of souls were led to expect a constitution, and a house of representatives; but as souls have been found difficult to manage, the King has postponed his promises, having obtained a dispensation, not from the Pope, but from Russia, Austria, and France, who have an aversion to any assemblage of souls.

ORIGINAL POPULATION.] The original population of Prussia appears, from Tacitus and Pliny, to have consisted of the Peucini and Æstii, Gothic tribes bordering on the Venedi, who were Slavons. The amber of the Æstii, who seem to have been merely a tribe of the Peucini, continued to be celebrated in the time of Theodoric; but at what precise period these original inhabitants were expelled, or subdued, by the Slavonic tribes on the east, remains uncertain. Suffice it in general to observe, that the Slavonic tribes extended widely over the north of Germany, after the old Gothic inhabitants had crowded to the more fertile regions of the south, in consequence of the decline and fall of the Roman empire. But the re-action of the knights of the Teutonic order, in the twelfth and following centuries, destroyed great numbers of the Slavons, and in some measure restored the original Gothic population. Yet

[1] Lib. i. cap. iv.

[2] Swedish Pomerania is also attached by a treaty between the two powers.

one

one half of the Prussian population must still be considered as Slavonic; as to the former Pomeranians must now be added a numerous accession of Poles. In general the Slavons are far more enslaved by their chiefs than any of the Gothic nations; and it is believed that the Polish people, however they may execrate the iron rod of Russia, will have no cause to regret that they have passed under the Austrian and Prussian sceptres *.

PROGRESSIVE GEOGRAPHY.] The progressive geography of those provinces which now constitute the Prussian territory would form an embroiled and multifarious topic. Ptolemy's eighth map of Europe presents a very confused idea, and imperfect information. The voyage of Ohter, in the reign of Alfred, affords a faint dawn of modern knowledge; which is increased by the descriptions of Adam of Bremen, and Helmoldus. One of the most singular features in the geography of these regions, during the middle ages, is the existence of Julin, a city of great extent and commerce, on the right bank of the Oder in Pomerania, which was destroyed by Waldemar I. king of Denmark, so that even the name hardly now exists in a place called Wollin. Further to the east the Slavonic tribes on the Baltic continued Pagans to a late period; and the country was little known, or visited, except by a species of crusaders, who went to assist the Teutonic knights in subduing those Saracens, as they were styled in the ignorance of the times.

HISTORICAL EPOCHS.] As this kingdom is recent, and composed of several ancient states, its historical epochs, and antiquities are of course complex. Not to mention the smaller provinces, among which was the distant principality of Neufchatel, on the frontiers of France, and Swisserland, Prussia may be regarded as consisting of four great divisions, the electorate of Brandenburg; the kingdom of Prussia Proper; the large province of Silesia; and a third part of the ancient kingdom of Poland. As the family which now rules those extensive domains was originally the electoral house of Brandenburg, it will be proper first to trace the progress of its power.

1. The German genealogists derive the house of Brandenburg from Thassilo count of Hohenzollern, who lived about the ninth century. Sigefred, a Saxon count, having married a daughter of Henry king of Italy, was appointed Margrave of Brandenburg A.D. 927; but many centuries elapsed before this dignity fell to the ancestor of the present family. The province had been for some centuries chiefly possessed by Slavonic nations, but the Margrave soon raised it to considerable distinction. The succession of these potentates, of various families, and their petty wars would little interest the reader.

2. The emperor Charles IV., in 1373, assigned Brandenburg to his second son Sigismund, who, in 1415, being then emperor of Germany, sold this Margravate and Electorate to Frederic burgrave of Nuremburg, for 400,000 ducats. Frederic, the ancestor of the present reigning race, displayed considerable abilities.

3. Joachim II., elector of Brandenburg, embraced the Lutheran religion in 1539, which has since been the ruling system of the state.

4. John Sigismond becomes duke of Prussia in 1618. This succession will be explained under the next division of the historical epochs.

5. Frederic William, surnamed the great elector, succeeded his father in 1640; and in 1656 compelled the king of Poland to declare Prussia an independent state, it having formerly been held of the Polish sovereigns. This prince is highly praised by his royal descendant, the author of Memoirs of the house of Branden-

* It is however said from good authority, that the peasants, under Russia, have been less oppressed than the two other classes.

burg, as the chief founder of the power of that family. He was succeeded in 1688 by his son.

6. Frederic III., or I., as king, who supporting the emperor in the contest for the Spanish succession, was by him declared king of Prussia; under which title he was proclaimed at Konigsberg, on the 18th day of January, 1701, he himself placing the crown upon his head.

7. Frederic William II., or I., as king, ascended the throne in 1713; and in 1721 founded the city of Potsdam. But he was chiefly remarkable as the father of that great prince Frederic II. *, who ascended the throne in 1740, and died in 1786, after a long and glorious reign; the most memorable and lasting event of which was the acquisition of Silesia from the house of Austria in 1742.

8. The short reign of his nephew is known to every reader. The failure of the Prussian Tactics in France and Poland convinced Europe that the great Frederic had been the soul of the machine. But these checks were recompensed by the completion of the Prussian acquisitions in Poland. The reign of his son, the present monarch, has hitherto been distinguished rather by prudence than enterprize †.

The historical epochs of Prussia Proper are not deserving of much elucidation. The knowledge of the ancients concerning this country has already been explained. A faint dawn of history, in the middle ages, discloses at the mouth of the Vistula the Pruzzi, a Slavonic nation, who were afterwards subdued by the knights of the Teutonic order.

1. This order originated A.D. 1190, in the camp of the Crusaders before Acca, or Acre, from some citizens of Lubec and Bremen, who united to relieve the wants of their German brethren. Next year a bull of institution was obtained from the Pope, ordering them to wear a black cross on a white mantle, and to follow the rule of St. Augustin, with all the privileges granted to the knights templars. The crusades to Palestine having failed, the knights directed their enterprize against the pagans of the north of Germany, A.D. 1227; and in a few years conquered Prussia, and founded several cities.

2. The knights thus established in Prussia directed their efforts against the Lithuanians and other pagans in the east. But repeated wars with Poland were less fortunate; and about 1446 the four chief cities of Prussia, Elbing, Thorn, Konigsberg, and Dantzick, withdrew their allegiance from the Teutonic order, and claimed the protection of Poland.

3. In 1466 Casimir king of Poland forced the Teutonic order to abandon to him the eastern part of Prussia, and to pay homage for the western part.

4. Albert of Brandenburg, grand master of the order, obtained from his maternal uncle, Sigismund king of Poland, the hereditary investiture of all that the order possessed in Prussia, and embraced the Lutheran religion. But particular grand-masters continue to be appointed by the emperor of Germany.

5. In 1569 Joachim II., elector of Brandenburg, had obtained from the Polish monarch the succession to the duchy of Prussia, in case the possessor died without heirs: but this addition of power and territory did not take place till 1618, when John Sigismund elector of Brandenburg acquired this duchy; and in 1621, his successor received the solemn investiture from the king of Poland. Nor was it, as already mentioned, an independent sovereignty till 1656, after which period the chief events may be traced under those of Brandenburg.

* In the regal genealogy the name of Frederic alone is considered as distinct from that of Frederic William.

† It has proved of all others the most unfortunate; the Prussian monarchy being now reduced to a cypher. But it *may* revive.

Silesia affords few materials for History. This country was formerly a Slavonic province of the Polish dominion; but in the 14th century was seized by John of Luxemburg king of Bohemia, (February 1339,) and passed with that sovereignty to the house of Austria. The house of Brandenburg certainly had some ancient claims to this province, which were finally ascertained by the sword in 1742, as already mentioned.

As not only the recent acquisitions in Poland were of far more comparative consequence to Prussia, than either to Austria or Russia; and as in fact this sovereignty was in possession of the metropolis, and all the chief cities and ports of Poland, and may be said to exist only on the basis of that ancient kingdom, which it represented in the modern balance of power, it will be proper here to repeat, in a few words, the chief epochs of the Polish history.

1. Even in the Roman times Poland was chiefly possessed by the Sarmatæ, or Slavons; and the Poles pretend to trace their dukes from the sixth century. But the authentic history only begins with Piast, A.D. 842. In 992 the christian religion was introduced.

2. Uladslas, duke of Poland, assumed the title of king A.D. 1320; and was succeeded by his son Casimir, surnamed the great.

3. The house of Jagellon, or Yagellon, dukes of Lithuania, ascended the Polish throne 1384, and ruled till 1572, in hereditary succession, though with pretended election.

4. The throne of Poland becomes merely elective in the person of Henry de Valois 1574; but it was afterwards chiefly contested by native princes and by the electors of Saxony.

5. John Sobieski, king of Poland, in 1683, forced the Turks to raise the siege of Vienna, which was the last valiant action achieved by the Poles.

6. The recent annihilation of the monarchy.

ANTIQUITIES.] From this general view of the component parts of the Prussian history it will appear that few ancient monuments can be expected in regions, where even a rude knowledge of the arts is comparatively so recent. Some Slavonic idols, cast in bronze, constitute almost the only pagan antiquities: and the castles and churches erected after the introduction of the Christian religion, have few singularities to attract particular attention. The Polish coinage begins about the 12th century, and is upon the German model.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE ruling religion of Prussia is the Protestant, under its two chief divisions of Lutheran and Calvinistic. But after the recent acquisitions in Poland, it would seem that the greater number of the inhabitants must be Roman Catholic. The universal toleration which has been wisely embraced by the Prussian monarchs, has had its usual effect of abating theological enmity, and the different sects seem to live in perfect concord.

ECCLESIASTIC GEOGRAPHY.] The ecclesiastical geography of Prussia would be at once little interesting, and of difficult detail. The bishoprics in Poland and Silesia seem to retain their ancient limits, while the power of the prelates is considerably abridged.

GOVERNMENT, &c.] As no vestige of any senate or delegates from the people is known in this kingdom, it must be pronounced an absolute government, but the spirit and good sense of the nation unite with the wisdom and mildness of successive monarchs, (who have uniformly wished to invite foreign settlers by views of ease and freedom, instead of expelling their own people by rigour,) to render the sovereignty as conciliatory, and perhaps more beneficent, than if joined with a venal senate. The late great monarch reformed many abuses in the laws; but it cannot be disguised that the tenor of his government was too military, a fault inherent in the Prussian system. In some respects it is doubtless unavoidable, as must ever be the case, in establishing a new power. And when we behold every petty prince in Germany surrounded by the idle parade of a little army, which far from being necessary at home is often sold to other states, we cannot wonder that the acquisitions in Silesia, and in Poland, must be maintained by armed force, instead of ancient attachment and habits of subjection; especially when we consider that Prussia is environed by the great military powers of Russia and Austria. All political plans must be weighed by the circumstances; and this dire necessity must exist till the benignity of the government shall have gradually secured the firm attachment of its new subjects.

POPULATION (1806).] Before the acquisitions in Poland, this kingdom was supposed to contain only about five millions and a half of inhabitants, including one million and a half in Silesia. But the late great acquisition in Poland has greatly enlarged the number of inhabitants, which may be about 80 to the square mile *.

COLONIES.] No foreign colonies have emigrated from Prussia; and it has been indeed a chief object with the monarchs to colonize the country itself.

* See the note at the end of this chapter.

ARMY.] The army is supposed to amount to about 200,000, including about 40,000 cavalry. The tactics of the late able sovereign conferred distinguished reputation on the Prussian battalions, but they are now supposed not to exceed the Austrian; and military men consider both as inferior to those of Russia, who seem to be justly regarded as the best troops in Europe.

NAVY.] The acquisition of Dantzick and some other ports in the Baltic, may in time place Prussia among the maritime powers; but as little is to be gained or apprehended at sea, it is natural that almost the sole attention should be paid to the land service, which can alone secure the country against the exorbitant power of Russia; for Austria has been so much enfeebled by the recent contest with France, that many years must elapse before Prussia can have any apprehensions from that quarter.

REVENUES.] Before the additions of Polish territory the revenue was estimated at 3,880,000l. sterling; and the expence of the army at 2,275,000l.[1] Frederic II. laudably expended about half a million sterling yearly, in the improvement of his dominions. The entire revenue of Poland was not computed to exceed 439,546l. sterling. If we even suppose half of this added to the Prussian revenue, the result would not be important; but as the Polish aristocracy carefully guarded against taxes to be defrayed by themselves, it is to be presumed that a new and more legitimate form of government will compel them to contribute largely to the expences of the state; which, considering the bondage in which they have held the peasantry, there will be no cause to regret. And it may be expected, from the spirit of the Prussian government, that the sums thus justly exacted from the rich will be in a great measure expended in the improvement of the acquired country, which may thus yield a fair revenue proportioned to its extent. The late great monarch, clearly foreseeing the destructive consequences of the funding system, which has been embraced by some other European powers, with his usual ability pursued the opposite plan of laying up a treasure to serve in times of necessity, instead of adding the oppression of taxation to the horrors of war. This treasure is said to have been expended by his immediate successor; but still Prussia has the supreme advantage of freedom from national debt, whence the smallness of the revenue has never been regarded as detracting from its position among the chief European powers.

POLITICAL IMPORTANCE AND RELATIONS (1806).] The political importance and relations of this kingdom have impressed the European history of this century with new and distinct features. What Poland would have been, if blessed with a happier government, and executive energy, may be conceived from the present appearance of Prussia, exclusive only of one circumstance, that of contiguity with the Ottoman dominions. An alliance with Prussia would be indeed of supreme importance to the Turkish empire; nor can it be the interest of Prussia to permit Russia to extend her aggrandizements. Yet the Porte has few advantages to offer, while Russia might secure the alliance of Prussia, by conceding a further part of Poland to balance any great accession of Turkish territory.

In regard to the other chief powers of Europe, England, France, Russia, and Austria, an alliance of the first with Prussia has repeatedly been enforced by circumstances; but it cannot be disguised that there is a more necessary and important connexion between Prussia and France, as both have cause to be jealous of the Austrian power, which France can essentially injure, while England is by nature debarred from any preponderating interference. But a chief province of Prussian politics must be the defence of the country against the arms and influence of Russia, for which purpose a most important step would be a firm alliance, cemented by every political tie and in-

[1] Boetticher, p. 50.

terest

terest, between Prussia, Denmark, and Sweden; which, if the Russian empire remain undivided, will be the sole barrier of continental independence *.

* The following estimate of Prussian population is compiled from the subdivisions of Hoeck, edit. 1801:

Eastern Prussia	940,000
Western Prussia	521,625
Southern Prussia	1,100,000
New Eastern Prussia	700,000
A part of Poland incorporated with Silesia	74,000
Pomerania	472,957
Brandenburg	755,577
New March	279,584
Magdeburg	275,262
Halberstadt	111,875
Minden	67,952
Ravensburg	81,812
East Friseland	102,594
Cleves	100,000
Mærs	17,000
Mark	121,984
Gelder	48,000
Tecklenburg	17,234
Lingen	23,432
Silesia	1,747,065
Anspach	215,256
Baireuth	205,440
Neufchatel and Valengin	42,500
	8,021,149

The revenues he computes sometimes in dollars, sometimes in florins, and in such minute subdivisions that the calculation would be very laborious.

The Prussian army, according to a particular table, amounts to 178,897 infantry, and 39,867 cavalry; forming with artillery, &c. a total of 237,089.

The intelligent author of *La Prusse, et sa neutralité*, 1800, 8vo. estimates, p. 15, the population at more than 9,000,000, but he is a panegyrist. The revenue he puts, p. 19, at above 5,000,000 sterling; and justly observes that this sum must be estimated, not in itself, but as compared with the cheapness of provisions, &c. so that it equals a far higher nominal revenue: and there is no national debt. The army, he says, p. 25, contains 224,144 men: there is no marine, the army requiring undivided attention.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs. — Language. — Literature. — Education. — Universities. — Cities and Towns. — Edifices. — Roads. — Inland Navigation. — Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of a country composed of such various inhabitants, recently united under one sovereignty, must of course be discordant. Silesia, Poland, and other Slavonic regions, may be supposed to contain many peculiarities, which distinguish them from the Germans. The reign of the great Frederic, who entertained a predilection for the French language and manners, contributed to impart a similar tinge to his subjects; yet travellers appear not to have been much impressed with any striking dissimilitude between the manners of the Prussians and those common to the other Germans. They have indeed remarked that, in comparison with the Saxons, who are a lively and contented people, the Prussians appear dull and gloomy; a character which they impute partly to the military government, and partly to the general anxiety which must have been excited by the repeated dangers to which their country was exposed, when contending with the powers of Russia and Austria. As to the Poles, they seem full of life and action, but their features and general appearance are rather Asiatic than European. "Men of all ranks generally wear whiskers, and shave their heads, leaving only a circle of hair upon the crown. The summer dress of the peasants consists of nothing but a shirt and drawers, of coarse linen, without shoes or stockings, with round caps or hats. The women of the lower class wear upon their heads a wrapper of white linen, under which their hair is braided, and hangs down in two plaits. I observed several of them with a long piece of white linen hanging round the side of their faces, and covering their bodies below their knees: this singular kind of veil makes them look as if they were doing penance.

"The dress of the higher orders, both men and women, is uncommonly elegant. That of the gentlemen is a waistcoat with sleeves, over which they wear an upper robe of a different colour, which reaches down below the knee, and is fastened round the waist with a sash or girdle; the sleeves of this upper garment are, in warm weather, tied behind the shoulders; a sabre is a necessary part of their dress, as a mark of nobility. In summer, the robe, &c. is of silk; in winter, of cloth, velvet, or stuff, edged with fur. They wear fur caps or bonnets, and buskins of yellow leather, the heels of which are plated with iron or steel. The dress of the ladies is a simple polonaise or long robe, edged with fur[1]." The same author observes that the Polish peasants differ widely in their dress from the Russian; the former in particular shaving their heads, and leaving only a circle of hair in the middle, while the Russians

[1] Coxe's Trav. into Pol. &c. i. 194.

wear their hair down to their eyebrows, and over the ears, and cut it short around the neck.

The manners and customs of the people of Silesia seem to resemble those of their neighbours the Bohemians; but both races have been so much melted down into that of the Germans, that the peculiar features are minute and unimportant.

LANGUAGE.] The ruling language of Prussia is the German, which it is probable may in time supply the Polish, in those parts which are subject to Prussia and Austria.

LITERATURE.] The literature of Prussia may well be conceived to be of recent origin; nor even after the restoration of letters did any remarkable author arise in the electorate of Brandenburg *. But Dantzick was the native country of Cluverius, an eminent geographer; and Copernicus, a great name in astronomy, was born at Thorn, as his predecessor Regiomontanus was at Konigsberg, his name being a Latin translation of that of his birth-place. Silesia has likewise few pretensions to literary fame, nor are those of Poland highly illustrious. Kadlubko, the most ancient Polish historian, wrote in 1223; and since his time there has been a succession of Latin chroniclers. But as the exertions of German genius in the native language have been little known till the present century, the literature of Prussia has few pretensions, and must yield to that of Saxony, the classical seat of German letters. Frederic the Great had a mean opinion of German literature; and, though he wrote in French, must be classed among the most distinguished authors of his kingdom. Nor is Count Hertsberg, his minister, without merit. Among the other names either natives or who flourished in Prussia, may be mentioned Ramler the poet, Nicolai an original writer of romances, &c., Busching the geographer, Spalding, and Mendelsohn [2]. Nor has Prussia yet produced any artists, painters, sculptors, or architects, of distinguished reputation.

EDUCATION.] The state of education in this country seems to be equally neglected as in the far greater part of Europe. The number of recruits wanted for the army, and the consequent uncertainty of destination for life, must singularly impede the national instruction.

UNIVERSITIES.] There are however several universities, such as that of Frankfort on the Oder, founded by Joachim, elector of Brandenburg, in the year 1516. Konigsberg, in Prussia, was founded in 1544. Nor must Halle and Erlangen be omitted. Of the Polish universities Cracow has fallen to Austria, and was founded in 1364; and Wilna, founded in 1570, to Russia.

CITIES AND TOWNS. — BERLIN, &c.] Among the chief cities of Prussia must first be mentioned Berlin, situated on the banks of the river Sprey, and regularly fortified. It was founded in the 12th century, by a colony from the Netherlands, and contains upwards of 140,000 † inhabitants, being about four miles and a half long and three wide; but within this enclosure are many gardens, and sometimes even fields; nor is it easy to reconcile 6000 houses, as enumerated by Riesbeck, with the number of inhabitants computed by Boetticher. However this be, the city is more remarkable for the elegance of the buildings, than for its wealth or industry, many beautiful houses being let in stories to mechanics. Next to Berlin may be mentioned Konigsberg, of which the population is computed at about 52,000. This city was founded in the thirteenth century, and is well fortified. It maintains a considerable trade by the river Pregel, which flows into the gulph of Dantzick.

* Leibnitz, a great name, must not be forgotten; and more recently Wolfe, Klaproth, Humboldt.
[2] Riesbeck's Trav. iii. 44.
† Hoek says 142,099; houses 6950.

Breslaw,

BRESLAW.] Breslaw, the capital of Silesia, has been long celebrated as one of the most beautiful cities in Germany. It is of uncertain antiquity, but was destroyed by the Tartars in the thirteenth century. The population is at least equal to that of Konigsberg, and it has several manufactures, the linens of Silesia being particularly celebrated. The ruling religion is that of Luther.

DANTZICK.] Dantzick, now restored to Prussia, contains about 36,000 inhabitants, and was known as a commercial town even from the tenth century. It was considered as the chief city of the Hanseatic league, and was enlarged and adorned by the knights of the Teutonic order. It must still be considered as the grand staple for the exportation of the corn and the other products of Poland; but its commerce has been for some time on the decline.

In the countries removed from the southern limits of ancient civilization, any formal enumeration of cities becomes less important, because those places which make an appearance on maps often derive their sole importance from their situation amidst surrounding desarts; and the expected city becomes, upon an examination, an insignificant town. Yet a few other cities of the Prussian dominions deserve geographical enumeration, in a progress from the more ancient territories in the west, to the recent acquisitions in the east.

OTHER TOWNS.] In the electorate of Brandenburg, and in the adjoining duchy of Magdeburg on the west, may be named Brandenburg, a small city of 6000 inhabitants, and Frankfort on the Oder, which contains about 16,000. Potsdam, a recent city, is situated on an island, amidst lakes and canals, and no expence has been spared in its decoration. The royal castle was built in 1663, and it has since been a favourite residence of several Prussian monarchs. The inhabitants are computed at 26,000. The other cities, or rather towns, in Brandenburg, seldom contain 5,000 inhabitants; but the duchy of Magdeburg presents the capital so called, which is supposed to hold about 26,000 souls, and is strongly fortified with a citadel on an isle in the Elbe. This city dates its origin from the time of Charlemagne: and can boast of elegant streets and flourishing manufactures. The imperialists taking it by storm in 1631, a dreadful slaughter ensued, the inhabitants who perished being computed at about 10,000. In the same duchy stands also Halle on the Saal, more than 50 miles to the south of Magdeburg: the inhabitants of Halle are computed at 21,000. Nor must Halberstadt, the capital of an adjoining principality, be omitted, as it contains about 12,500 souls: in which number it is rivalled by Quedlinburg in the same province. It may be remarked, in passing, that the Westphalian dominions of Prussia present no city of much account, and the remote town of Neufchatel contains only about 6000 souls.

On proceeding to Pomerania on the north, first occurs Stettin, a city on the Oder, of some trade, and about 1800 inhabitants. Those of Stargard, in Further Pomerania, are not estimated at above 6000.

In Prussia, properly so called, may be named Elbing, which is supposed to hold 14,000 souls. The other secondary towns rarely exceeded 3000 inhabitants, till acquisitions of adjacent territory gave to Prussia Thorn, with a population of 10,000. Excepting Breslaw, the capital, already mentioned, there are only three towns in Silesia, which contain more than 6000 inhabitants; namely Glogau, Hirschberg, and Schweidnitz. Nor do any of the towns recently acquired in Poland even equal this population.

EDIFICES.] Some of the most splendid edifices of this country adorn Berlin the capital, such as the palace and the theatre. But the other grand buildings seem not to have impressed travellers with veneration, being barracks for soldiers and the like[4]. And the city itself is almost entirely built with brick, though the fronts of the houses are disguised with stucco. The palace at Potsdam deserves superior applause; and on an eminence near the city stands the royal villa of Sans Souci, which however can claim no grandeur of external architecture. Konigsberg, and Dantzick also offer to view respectable public buildings, but in general this kingdom yields even to Russia in this respect.

INLAND NAVIGATION.] The advantages of inland navigation seem little known or cultivated in the Prussian dominions; and though several small canals might be mentioned, yet they rather belong to the office of the topographer than to a general system of geography.

MANUFACTURES AND COMMERCE.] If we except the linens of Silesia, the manufactures of the Prussian dominions are of small importance. Yet they afford for home consumption, glass, iron, brass, paper, and woollen cloth; and Frederick II. introduced a small manufacture of silk. Even the exports of Dantzick consist almost entirely of timber, corn, tallow, and similar articles.

Nor, if we except the ancient staple of grain, so abundant in the level plains of Poland, can the commerce of Prussia appear in an important light. Amber is by nature constituted a monopoly of the country, but fashion has rendered this branch of commerce insignificant. Yet among the considerable exports may be named excellent timber of all kinds, skins, leather, flax, and hemp; nor must the linens of Silesia be passed in silence, many of which are sent into Holland, and sold under the name of Dutch manufacture. In return Prussia receives wine, and other products of more southern and favoured countries.*

[4] Wraxall's Mem. i. 101.

* For more minute particulars Hoeck may be consulted. The amber amounts to near 200 tons annually. In 1777 there were in Further Pomerania 219,991 mulbery trees; yet the pure silk is only computed at 680 pounds weight. Brandenburg exports timber, from Hamburgh, to the amount of one million of dollars. In Silesia (1796) there were 40,603 persons employed in the linen manufacture; and 13,540 in the woollen. Memel exports much timber to England.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons. — *Face of the Country.* — *Soil and Agriculture.* — *Rivers.* — *Lakes.* — *Mountains.* — *Forests.* — *Botany.* — *Mineralogy.* — *Mineral Waters.* — *Natural Curiosities.*

CLIMATE AND SEASONS.] THE climate of the Prussian dominions is, upon the whole, cold and moist. That of Brandenburg, which is an extensive level of sand, and that of Pomerania, may be regarded as more free from humidity than that of Prussia Proper, which as Busching informs us [1], has about eight months of winter, the autumns being often deluged with rain. The northern part of Poland, which has fallen under the Prussian sceptre, abounds with forests and marshes, which cannot be supposed to render the air salubrious. The lower parts of Silesia are regarded as the most healthy and fertile provinces of the monarchy; but the southern, and western parts of that duchy, bordering on elevated mountains, long covered with snow, are exposed even in summer to severe freezing gales.

FACE OF THE COUNTRY.] In considering the general appearance of these extensive regions, Brandenburg is a sandy, and barren country, but Prussia Proper formerly abounded in woods, and displays superior fertility; a character which may also be extended to Prussian Poland, an immense plain. Silesia, on the contrary, displays a pleasing diversity, being level and open towards Poland, but separated from Hungary on the south by the Carpathian mountains, a branch of which proceeding northwest divides this country from Moravia and Bohemia. It is every where watered by the Oder, and its tributary streams: nor is there any deficiency of rivers in the other parts of the Prussian sovereignty.

SOIL AND AGRICULTURE.] The soil of Brandenburg is meagre, and even the space between Berlin and Potsdam resembles a wilderness; but that of Prussian Poland is loamy and fertile. The northern extremity of Silesia shares the sandy soil of Brandenburg, yet this province is in general extremely productive, and abounds in fruits and culinary vegetables.

Agricultural improvements are little known, and Brandenburg chiefly produces scanty crops of rye; but Prussia Proper, and the Polish provinces display every kind of grain and esculent plant, that can flourish under such a latitude; and among the productions of Silesia must be classed maiz, and even vines, but the wine is of inferior quality.

Such are the general ideas to be derived from Busching, and other German geographers; but an intelligent traveller, or rather observer, of our own country has thrown a strong light on this important topic, and a few of his observations shall here be transcribed [2]. The soil of Prussia Proper he represents as sandy and ill-cultivated, yet the peasants, though oppressed by heavy taxation, being free from the wanton extortions and capricious personal services, exacted by the Polish aristocracy, displayed

[1] iii. 5. [2] Marshall's Travels, iii. 240, &c. said to have been written by Sir John Hill.

signs of comparative ease and prosperity. The soil being light, two oxen, or sometimes even a small horse and a cow, are sufficient to draw the plough. The chief crop was buck-wheat, which they found more profitable than barley; and this grain was generally cultivated, along with a few Swedish turnips, except in the neighbourhood of Dantzick, where the abundance of manure assures plentiful crops of wheat. In different parts of Silesia the land is let in farms, as in England, and the peasants hired as day labourers; while under the detestable government of Poland they were mere slaves, and every avenue to industry was barred. In speaking of the continuous sandy soil of Brandenburg, he observes, "that they find that the only very profitable crop upon these sands is buck wheat, which they sow in large quantities, and they get a product which equals the best soils applied to that grain: when a piece of land has been more carefully managed than ordinary, it will yield a good crop of rye; but as to wheat or barley it is hardly to be seen." Between Berlin and Saxony he finds a continuation of the same crop, with turnips and rye, which he supposes to be the sole agricultural products in these regions. In Saxony the soil becomes a good loam, yielding tolerable crops of wheat [3].

Rivers.—Elbe, &c.] Among the chief rivers of the Prussian dominions may be first mentioned the Elbe, which rises in the south of Bohemia, and pervades the duchy of Magdeburg. The Spree, which passes by Berlin, falls into the Havel, a river tributary of the Elbe. The Oder, the Viadrus of the ancients, may be regarded as a river entirely Prussian: it rises in the mountains of Moravia, and after watering Silesia, Brandenburg, and Pomerania, joins the Baltic, after a course of about 350 miles. Next appears another noble stream, the Vistula, which rising in the Carpathian mountains, passes Warsaw, and joins the sea near Dantzick, after a circuit of about 450 miles. The Pregel, passing by Konigsberg, springs from some lakes and marshes in Prussian Poland; and the Memel, a superior river, now forms, in part, the Prussian boundary on the east.

Lakes.] The lakes in the Prussian dominions are numerous, especially in the eastern part, where among others may be mentioned the Spelding See, which, with its creeks, extends more than twenty British miles in every direction. That region contains many other other lakes, which supply the sources of the river Pregel. At their estuaries the rivers Oder, Vistula, and Memel, present singular inland sheets of water, in the German language called *Haffs;* that of the Oder being styled Grass Haff; that of the Vistula, Frisch Haff (with another inland creek called the lake of Drausen); and that of the Memel, Curisch Haff. The Frisch Haff is about seventy miles in length, and from three to ten miles broad, being separated from the Baltic by a long slip of land, said to have been thrown up by the tempests and waves about the year 1190. This lake or bay is of small depth, and will not admit vessels of much burthen [4].

Curisch Haff.] The Curisch Haff, so called from its situation in the ancient duchy of Courland, is about 60 British miles in length, and about 30 in its greatest breadth. A similar ridge of land divides it from the Baltic; and it is full of dangerous shelves, and infested by frequent storms.

Mountains.] Magdeburg, Brandenburg, Pomerania, Prussia, and Poland, are in general level countries; and the only mountains in the Prussian dominions are those of Silesia. The mountains in the south and west of this province may be regarded as a northern branch of the Carpathian chain, which itself forms the most southern boundary. This branch extends from Jablunka south-east to Friedberg in Upper Lusatia, north-west, near 200 British miles in length, and is called Sudetische

[3] Marshall's Travels, iii. 288.

[4] Busching, iii. 10.

Gebirge,

Gebirge, or the Sudetic mountains; but has also more minute appellations, the north-west part towards Lusatia being called Riesen, the middle part the Bohemian, and the south-east the Moravian chain. Of this remarkable chain, which has escaped the attention of most geographers, and drawers of maps, the highest peak in the mountains of Riesen, or of the giants, is the Schneekoppe, or snow head, in the Bohemian part, the Eule, or Owl, and the Zotenberg. The Moravian ridge divides into inferior branches, one of which forms a northern boundary of the principality of Troppau. In the north-western parts of Silesia are also detached mountains of considerable height [5], as the Spitzberg, and Gratzberg, the Ruheberg, the Georgenberg, and the Reichenbach. Of these mountains the precise height seems not to be ascertained, yet they may safely be concluded to yield greatly to the Carpathian chain, an account of which will be found in the description of the Austrian dominions *.

FORESTS.] Few parts of the Prussian kingdom are destitute of woods and forests, which particularly abound in Prussia Proper, and in the recent Polish acquisitions. Towards Hungary Silesia presents a continuation of thick forests, which conspire with the elevated mountains to form an impenetrable barrier.

BOTANY.] The indigenous vegetables of the Prussian dominions have hitherto been viewed in only a very cursory manner. Among these there do not seem to be any which have not already been sufficiently noticed in the preceding accounts of Britain, and Austria. The mountainous ridges of Prussia being few, and of little importance, there is in consequence a great deficiency of alpine plants, the prevailing vegetables being those that inhabit level and sandy districts: the few following ones are all that it seems necessary to notice consistently with our general plan. Calla palustris; asarum europæum, *asarabacca;* iris Sibirica, *Siberian iris;* lilium bulbiferum and martagon, *orange* and *martagon lilies;* laserpitium latifolium, *laserwort;* and nicotiania tabacum, *tobacco*, this plant, originally a native of America, and probably also of the east, having been long cultivated in Prussia, has at length established itself in the soil, and is found in the ploughed fields, and hedges, as a common weed †.

ZOOLOGY.] The breeds of horses, and cattle, seem not to have impressed travellers with any distinction from those of the adjacent countries, and few parts are calculated for excellent breeds of sheep. The urus, or large and ferocious wild cattle of Lithuania, have also appeared in Prussia Proper, but the race seems nearly extinct. One of its chief haunts was the forest of Masovia not far from Warsaw. The marmot, and a species of castor, may also be classed among the wild animals; and among the more ferocious the lynx, an animal of the colder climates, about the size of a fox, but the face and motions rather resembling those of a cat. Nor are these regions unvisited by the bear and the elk. The Oder sometimes affords sturgeon of a large size.

MINERALOGY.] The mineralogy of the Prussian dominions will not afford an extensive theme. Sand and plains rarely contain minerals, and even the mountains of Silesia boast of few hidden treasures. Yet in the southern districts of that province

[5] Busching, vi. 214.

* Busching, vi. 283, informs us that the Zottenberg, between Schweidnitz, and Breslau, is a celebrated mountain supposed to be the Asciburgius of Ptolemy; which however rather seems to be the ridge of Erzgeberg. The height has been computed at about 2120 Rhenish feet. On the south it is connected with the Sudetic chain, but on all other parts is surrounded by a vast plain, and is supposed to derive its name from the neighbouring village of Zobten. This mountain consists entirely of serpentine with some hornblende. Kirwan, Geol. Ess. 204.

Fabri computes the highest peak of Riesen at 4930 Rhenish feet above the sea, and the Zottenberg at 1700. The Silesian mountains, he adds, yield some silver, tin, copper, and cobalt, with considerable quantities of calamine, lead, and iron: and there are quarries of marble, freestone, alabaster, slate, and potters clay. Coal abounds near Schweidnitz.

† Wulff, Flora Borussica.

there were formerly mines of gold and silver, but the produce did not defray the expence, though in the time of Busching two or three of the latter metal continued to employ some labourers. Mines of copper and lead however still exist, and there are considerable founderies of iron. In the mines of Silesia is found abundance of chrysoprase, which has been detected in various stages of transition, and appears to be a semi-opal deriving its green tincture from nickel. Agates, jaspers, and clear crystals of quartz, vulgarly called diamonds, are also found in the Silesian mountains. Coal, a more useful mineral, occurs in various parts of Silesia, and the level districts sometimes offer good peat moors.

AMBER.] But the most distinguished and peculiar mineral production of Prussia is amber, which is chiefly found on the Samland shore of the Baltic, near Pillau, on a neck of land formed by the Frisch Haff, which seems to have been the chief seat of this mineral from the earliest ages. Amber is allowed by the best mineralogists to be decidedly of vegetable origin, but mineralized by some operation of nature, similar to that by which animal flesh is converted into a substance resembling spermaceti [6]. It is found at the depth of about 100 feet reposing on wood coal, in lumps of various sizes, some five pounds in weight, and is often washed on shore by tempests. By friction it becomes electric, and has imparted its Greek name to the modern philosophy and doctrines of electricity. It adds about 5000l. yearly to the royal revenue *.

MINERAL WATERS.] Silesia presents one spring of hot water at Warmbrun, near Hirschberg, which is, as is believed, the only mineral water worth notice in the Prussian dominions.

NATURAL CURIOSITIES.] The Sudetic chain of mountains has been little explored, and the level parts of the Prussian dominions can, of course, afford few objects of natural curiosity, if we except the mines of amber above mentioned.

[6] Kirw. ii. 66.

* In the *Journal des Mines*, No. 79. p. 37, may be found an interesting account of the mines of Prussian Silesia. They were begun about 1784, under the direction of Count de Reden; and for iron are the most considerable in Germany. In the *Journal de Physique*, vol. 39, 1791, we are told, p. 365, of an amber mine in Prussia 98 feet in depth, where the amber is found between two falbands of carbonated wood, and sometimes adherent.

SPAIN
AND
PORTUGAL.
BAY of BISCAY
ATLANTIC OCEAN
MEDITERRANEAN SEA
GALICIA
ASTURIAS
LEON
BURGOS
NAVARRA
ALAVA
ENTRE DOURO
TRAS OS MONTES
BEIRA
SALAMANCA
ESTREMADURA
MADRID
TOLEDO
CUENCA
ARAGON
CATALONIA
VALENCIA
MURCIA
GRANADA
JAEN
KDM OF SEVILLA
KDM OF CORDOBA
KDM OF ALGARVE
ANDALUSIA
Pyrenean Mountains
STRAIT of GIBRALTAR
MINORCA
MALLORCA
IVIZA
FORMENTERA
ALGIER

SPAIN.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

NAMES.] THOUGH Spain appears to have been known to the Phœnicians, near 1000 years before the birth of Christ, and their Tarsish to have been the little isle of Tartessus, near Gades, yet it seems hardly to have been disclosed to the Greeks in the time of Herodotus. It is probable that the whole country was the Tarsish of the Phœnicians and Hebrews, though the learned Huet rather restricts it to Betica, or the southern part of Spain; which region was, as is well known, the Mexico of the Phœnicians, who from it imported large quantities of silver. When the Greeks established a colony at Marseilles, they must not long after have discovered the northern part of this fertile region; which from the noble river Iberus, or Ebro, they called Iberia; and from its extreme situation in the west it was also styled Hesperia. The Romans, probably from a native term, have fixed and handed down *Hispania;* which has been variously adapted to the idiom of modern languages.

EXTENT.] Spain lies between the 36th and 44th degrees of north latitude; and its western extremity is about 9° in longitude west from London. The greatest length west to east is about 600 miles; the breadth north to south more than 500; thus forming almost a compact square, (if we include Portugal in this general view of the country,) and surrounded on all sides by the sea, except where the Pyrenean chain forms a grand natural barrier against France *. But as the present estimate must exclude Portugal, which is reserved for another article, it may be observed that the boundaries betwixt these two kingdoms depend on artificial conventions, and not on rivers or mountains, or other remarkable features of separation. Spain is supposed to contain about 148,000 square miles; which, estimating the population at 11,000,000, yield 74 persons to the mile square.

Bourgoing has observed †, that the divisions of Spain received in maps and books of geography are little known in practice. The three provinces of *Biscay*, *Navarre*,

* The river Bidasoa forms the west boundary, and near its mouth is the isle of Pheasants. Irum, near the Bidasoa, is the last town in Spain. Dillon, 133.

† Vol. i. p. 183.

under the title of a kingdom, and the *Asturias*, as a principality, form states apart, which neither admit custom-houses nor intendants, nor scarcely any appearance of fiscal government. In this respect all the rest of the monarchy is divided into twenty-two provinces for the crown of Castile; and four for the crown of Arragon. These provinces are of very unequal extent, those of Castile being the kingdom of *Gallicia*, the provinces of *Burgos*, *Leon*, *Zamora*, *Salamanca*, *Estremadura*, *Palencia*, *Valladolid*, *Segovia*, *Avila*, *Toro*, *Toledo*, *Mancha*, *Murcia*, *Guadalaxara*, *Cuenca*, *Soria*, and *Madrid;* and in fine Andalusia, which comprises four provinces, decorated with the title of kingdoms which they bore under the Moors, namely, the kingdoms of *Seville*, *Cordova*, *Jaen*, and *Granada*. The four provinces of the crown of Arragon are, the kingdom of *Arragon*, the kingdom of *Valencia*, the principality of *Catalonia*, and the kingdom of *Majorca*.

Spain is also divided into thirteen governments, of which twelve are ruled by captains general, while the governor of Navarre is styled viceroy. The provinces of Castile and those of Arragon differ considerably in the interior administration, and the form of levying the taxes.

Original Population.] The original population of Spain seems to have consisted of Celts from Gaul, and of Moors, Mauretani, from Africa; but the latter, a more warlike race, expelled the former, and even passed into Aquitain in France. After the German Gauls had colonized the south of modern France, where they were the Galli Braccati of antiquity, they began to make expeditions into Spain, where they seized the region to the north-east, and became the Celtiberi of classical geography. Hence the names of rivers and mountains in Spain rarely display a Celtic origin, being often African, and unlike those to be found in other parts of Europe, though recorded many centuries before the arrival of the Mahometans; and often Gothic, though mentioned before the Gothic invasion in the fifth century. It is probable that the African settlers were not a little assisted in the expulsion of the primeval Celts by the Phœnicians, and afterwards by the Carthaginians, whence the latter maintained such sway in distant parts of this country. But the records of Punic history being lost, we must be contented to begin with the African colony *; which was succeeded, probably about 150 years before the Christian era, by the incursions and settlement of the Celtiberi, and other Gaulic colonies, who were only styled Celts, as having passed from Celtic Gaul; for the names of places, and other strong indications, denote their Gothic origin.

Towards the east must be added large colonies of Carthaginians, and afterwards of Romans; for this country, which rivalled Italy in soil and climate, invited an unusual number of the latter, and produced many classical authors. From its natural situation Spain has derived a greater mixture of inhabitants than perhaps any other European country. In the fifth century it was conquered by the Vandals; but, being afterwards weakened by their settlements in Africa, they were subdued by the Visigoths, who founded the modern kingdom of Spain, and from whom the more ancient families still pretend to derive their origin. The Mahometan Moors having been expelled, they must not be considered in the estimate, though a few families may be of Arabian extract: and the modern Spaniards may be considered as descended from the African Iberians, the Celtiberian or German Gauls, the Romans, and the Visigoths.

Progressive Geography.] The progressive geography of Spain is also very various. Little is known till the Roman conquest, when Spain was divided into three provinces, Tarraconensis, or the north-east half of Spain; Bætica, or Betica in the south; and Lusitania on the west, extending from the river Douro in modern Portugal on the

* The language of the Iberi or African colony remains in the Basque or Biscayan.

north, to the present boundary of that kingdom on the south. After the subjection by the Visigoths these divisions seem to have passed into oblivion: but the conquest by the Moors established a new and important distinction in Spanish geography, that of Christian and Mahometan Spain; and which is in some measure blended with the topic next to be considered.

HISTORICAL EPOCHS.] The chief historical epochs of Spain are:

1. The original population by the Africans, and German Gauls.
2. The Carthaginian acquisitions in Spain.
3. The conquest by the Romans, who maintained possession for more than five centuries.
4. The subjection of Spain to the Vandals, about the year 415.
5. The conquest of Spain by the Visigoths under Euric, excepting Galicia, held by the Suevi, who had entered with the Vandals. The Galicians have to this day a distinct character of superior industry. In Euric, A. D. 472, commences the modern kingdom, and history of Spain. The Visigoths were Arians.
6. The conquest by the Arabs, or Moors, which began A. D. 709, and soon extended over all Spain, except the mountains of Asturias, where king Pelagius maintained a confined domination over that district, and Biscay. His descendants fixed the royal residence at Oviedo, built in 761, and not only defended their small territory, which was naturally fortified with chains of mountains, but soon regained Galicia, and part of Leon and Castile. In 914, as the territory extended towards the south, the kings began to reside at Leon, and thence derived their title; to which, in the eleventh century, was added that of Castile. But the Moors must be regarded as the chief possessors of Spain, till the middle of the thirteenth century.
7. The Moorish domination in Spain, which was conducted by governors appointed by the chaliffs till A. D. 756, when Abdoulrahman seized the sceptre of Spain, and became the Moorish king of Cordova, and first chalif in the west. His successors continued to display great wealth and power; and under their sway the commerce of Spain became very extensive[1]. This dynasty continued till A. D. 1038, when the Spanish Chalifate expired, and the Moorish governors of several provinces usurped the royal style, in Cordova, Seville, Valentia, and Granada; who nevertheless rivalled the small Christian kingdoms till the middle of the thirteenth century, when, as already mentioned, the latter became preponderant, and Spain resumed her situation among the states of Christendom.
8. The kingdoms of Castile and Leon sometimes fell to distinct heirs; and the historical confusion is increased by the small kingdom of Navarre, the capital of which was Pampelona, a royalty which commenced A. D. 857: by that of Arragon, A. D. 1035: and other subdivisions.
9. The reign of Alphonso the wise, which began A. D. 1252; and which rivalled those of the Spanish Chalifs in the protection afforded to the arts and sciences.
10. The conquest of the kingdom of Granada, the last of the Moorish royalties; and the junction of the important crowns of Castile and Arragon, in the persons of Ferdinand and Isabella.
11. The reign of Charles V., son of Philip of Austria, who married the heiress of Arragon and Castile, and established the Spanish monarchy on its present basis. The wealth of America, discovered in the reign of Ferdinand and Isabella, now began to impart exuberant supplies, and the power of Spain arrived at its zenith.
12. Acquisition of Portugal by Philip II., A. D. 1580.

[1] Hist. de L'Afriq. et de L'Esp. sous la Domination des Arabes, par M. Cardonne. Paris, 1765. 3 vols. 12mo.

13. The revolt of Portugal under Philip IV. A. D. 1640; which has since existed as a separate kingdom, after having been subject to the Spaniards for sixty years.

14. The termination of the Austrian Dynasty, by the death of Charles II., Nov. 1, 1700: and the accession of the house of Bourbon, since which no epoch of singular consequence has arisen.

ANTIQUITIES.] Of the first of these epochs it can hardly be supposed that any remains should exist, except a few tumuli, and other rude monuments. Nor are there any certain relics of the Carthaginians in Spain, except coins, which have been found in considerable numbers.

The Roman antiquities are, on the contrary, so numerous that to enter into details on the subject would be prolix, and foreign to the nature of this work. The aqueduct at Segovia is one of the noblest of the Roman edifices [2]. It consists of 159 arches, extending about 740 yards; and is rather more than 94 feet in height, where it crosses the valley. Morviedo, the ancient Saguntum, presents many curious remains of antiquity. The theatre is capable of receiving near 10,000 people, and is hewn out of the solid rock; a labour not so great as might be imagined, as the Spanish rocks are often gypseous, or calcareous. Tarragona, the ancient Tarraco, and capital of two thirds of Spain, also contains many curious monuments. In short the traveller will find abundance of Roman remains spread over this delightful country.

The Visigothic kings have left few relics, except their coins, which are struck in gold; a metal then unknown to the other European mints, and seemingly native. The churches, &c. of that period were probably destroyed by the Moorish conquest.

Numerous and splendid are the monuments of the Moors in Spain. The mosque at Cordova was begun by Abdoulrahman, the first chalif. The second chalif of that name reared the walls of Seville. But these princes were far exceeded in magnificence by Abdoulrahman III., who built a town three miles from Cordova, which he called Zehra, after the name of one of his female favourites; and ordered a palace to be constructed by the most skilful architects of Constantinople, then the chief abode of the arts and sciences (A. D. 950.) [3]. In this place were reckoned 1014 columns of African and Spanish marbles; while Italy had supplied 19, and the Greek emperor had transmitted 140 of surprising beauty. The hall was decorated with marble, and massy gold; and in the midst of the ceiling was hung the famous pearl which the Emperor Leo had sent to the Chalif. The expence of Zehra, the palace, and gardens, was computed at 300,000 dinars of gold annually, for twenty-five years, or about 2,500,000 l. The mines of gold and silver, then wrought in Spain, conspired with extensive commerce to afford an ample revenue. Yet on the death of this magnificent prince a paper was found in his hand-writing, declaring that, during a prosperous reign of fifty years, he had only enjoyed fourteen days that were uniformly pleasant and agreeable. The mosque at Cordova still surprizes travellers with the multitude of columns, which are computed at 800; but the palace of Zehra appears to have been annihilated in the barbarous and fanatic wars of the middle ages: and Granada, the last Moorish kingdom, having been subdued after the arts and sciences began to revive, it is natural there to expect the best preserved remains of Moresque antiquity. Nor will their Alhambra disappoint this expectation, as the reader may judge from Mr. Swinburne's elegant drawings; but for the sake of brevity Mr. Townsend's description shall be preferred. "You enter first into an oblong court of 150 feet by 90, with a bason of water in the midst, of 100 feet in length, encompassed by a flower border. At each end is a colonade. From hence you pass into the court of the lions, so called because the fountain in the middle is supported by thirteen lions. It is adorned with a colonade

[2] Townsend, vol. ii. p. 115.

[3] Cardonne, ubi supra.

of

of 140 marble pillars. The royal bedchamber has two alcoves, adorned with columns, and a fountain between them, in the middle of the room. Adjoining to this are two hot baths. The great hall is about 40 feet square, and 60 in height, with eight windows and two doors, all in deep recesses. Between this and the oblong court is a gallery of 90 feet by 16. All these lower apartments have fountains, and are paved either with tiles or marble, in checkers. The idea of the cielings is evidently taken from *stalactites*, or drop-stones, found in the roofs of natural caverns. The ornaments of the friezes are arabesque, and perfectly accord with the Arabic inscriptions, which are here suited to the purpose for which each apartment was designed." Above is a suit of elegant apartments for the winter. This edifice was finished A. D. 1336.

The Christian antiquities of the middle ages consist of numerous churches, castles, and monasteries, as usual in other European countries.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE religion of Spain is the Roman Catholic, which in this country and Portugal has been carried to a pitch of fanaticism unknown to the Italian states, or even in the papal territory. The inquisition has, in these unhappy kingdoms, been invested with exorbitant power, and has produced the most ruinous effects, having been formerly conducted with a spirit totally the reverse of the mildness and charity of Christianity. This evil has been recently subdued in a considerable degree; but one fanatic reign would suffice to revive it. A yet greater evil, which has sprung from fanaticism, is the destruction of morals; for the monks being extremely numerous, and human passions ever the same, those ascetics sometimes atone for the want of marriage by the practice of adultery; and the husbands from mere piety are constrained to connive at this enormous abuse. The conscience is seared by the practice of absolution; and the mind becomes reconciled to the strangest of all phenomenons, theoretic piety and practical vice, united in bonds almost indissoluble.

ECCLESIASTIC GEOGRAPHY.] According to the returns made to the government, the Spanish clergy stand as follow[1]:

Parochial clergy, called curas	16,689
Assistants, called tenientes curas	5,771
Sacristans or sextons	10,873
Acolitos, to assist at the altar	5,503
Ordinados de patrimonio, having patrimony of three reals a day	13,244
Ordinados de menores, with inferior ecclesiastical orders	10,774
Beneficiados, or canons of cathedrals, and other beneficiaries	23,692
Monks	61,617
Nuns	32,500
Beatas	1,130
Syndics, to collect for the mendicants	4,127
Inquisitors	2,705
	188,625*

The archbishops are eight; bishoprics forty-six. The most opulent see is that of Toledo, which is supposed to yield annually about 90,000l.[2]. The Mozarabic Missal,

[1] Townsend, ii. 213.
[2] Townsend, i. 311

* Others compute the clergy at 400,000. MS. notes.

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composed by St. Isidore for the Gothic church, after the conversion from Arianism to the Catholic faith, continued to be used in Spain till the Moors were subdued, when the Roman form was introduced, but the Mozarabic is still used in a chapel at Toledo.

GOVERNMENT.] The government of Spain is well known to be despotic, the states or Cortes having hardly been assembled since the time of Charles V.* Dr. Robertson's history of that reign may be consulted for an able view of ancient Spanish liberty. If the late monarchs had been as much addicted to mass as to the chace, it is probable that the inquisition would have become the chief power in Spain. The despotism of the monarchy, which might in the hands of an able and intelligent prince be attended with great benefit to the nation, by the instantaneous extinction of abuses, is here balanced by the power of the church, to which even the nobles are submissive devotees†. It is tempered, as usual even under oriental despotism, by many councils, who are responsible for any unwise or unsuccessful measures; for power is intimately connected with capacity, and when despotism is arraigned, there is often more cause to lament the mere indolence of the despot, who, instead of exerting his power for the general benefit, commits it to others for their peculiar advantage. The chief councils in Spain are: 1. that of dispatches, called also the junto or cabinet council, being composed of the king and his ministers of state. 2. The council of state, in which the king presides, and of which the Archbishop of Toledo is always a member. 3. The royal council of finances, called the Hazienda. 4. The supreme council of war. 5. The supreme council of Castile. 6. The supreme council of Arragon. 7. The supreme council of the inquisition. 8. The royal council of the orders of knighthood. 9. The royal council of the Indies. 10. That of Crusada, composed of a commissary general, a member of the council of Castile, and another of that of Arragon, who arrange the sale of little papal bulls, granting certain indulgencies to the purchasers. The grandees of the kingdom, who were formerly styled the Rich Men, have several privileges; among which an important one in their eyes is that of wearing their hats in the royal presence, which is however never done except at the nod of the sovereign.

LAWS.] The laws of Spain are contained in several ancient codes; and recourse is also had to the civil and canon law. The *Escrivanos*, or attornies, are numerous, and instead of explaining the codes, often impede the administration of justice. Mistaken mercy frequently retains criminals in long durance, so that when they are executed their offence is forgotten, and the example of punishment becomes inefficacious.

POPULATION.] The population of this kingdom is computed at 11,000,000, or 74 to a square mile; while France yields 174, and England 169: nay the kingdom of Naples is computed at 201. This striking defect of population has deservedly excited attention; and a late intelligent traveller [3] has attempted to assign the reasons, among which may be numbered the expulsion of the Jews after the conquest of Granada: that of the Moors by Philip III.; the contagious fevers frequent in the southern provinces; the incessant intestine wars, for seven centuries carried on against the Moors; the emigrations to America; and the vast numbers of unmarried clergy and monks. Several other causes are enumerated, among which must not be forgotten the want of detached farms ‡; the struggles with the Moors having instituted a rooted prejudice, which

* There never were, however, general Cortes of Spain. Castile and Arragon had each their Cortes, but they never met together. M.S notes.

See also the *Tableau de l'Espagne Moderne, par J. F. Bourgoing.* Paris, 1803, three vols. 8vo. which, as I have been assured by persons long resident in the country, is the best account yet published. The journey of Fischer, London, 1802, 8vo. may be regarded as an interesting supplement. Bourgoing had resided at different times ten or twelve years in Spain.

† The power of the church against the crown is not greater than in England. MS. notes.

[3] Townsend, ii. 218. ‡ The effect of the Mesta, or wandering flocks, must not be forgotten.

induces

induces the yeomanry to crowd in towns and villages, as if for mutual defence, instead of spreading over and enriching the whole face of the country.

In the year 1787 the population of Spain was thus aranged[4]:

Males unmarried - -	2,926,229
Females ditto - -	2,753,224
Married men - -	1,947,165
Married women - -	1,943,496
Widowers - -	235,778
Widows - - -	462,258
	10,268,150

Exclusive of the clergy, who are above enumerated, the numbers of each rank were thus calculated [5]:

Men servants—Criados -	280,092
Day labourers—Jomaleros -	964,571
Peasants—Labradores -	917,197
Artisans - - -	270,989
Manufacturers - -	39,750
Merchants - - -	34,339
Knights—Hidalgos - -	480,589

"Of these last 401,040 are in the provinces of the Asturias, Biscay, Burgos, Galicia, and Leon."

In the most uncivilized regions gentlemen, or rather idle men, are always the most abundant; where the civilization advances they are supplanted by a much more useful and respectable race, the men of industry: but the *hidalgos* are often industrious farmers and labourers.

Colonies.] After the immortal discoveries of Cristoval Colon, called by writers in Latin Christopher Columbus, the Spanish colonies soon became numerous and extensive, in the West Indies, South America, and various isles in the Pacific Ocean. No nation, except the English, can in this respect rival Spain. But the superior advantages of England, in religious and political freedom, have soon replaced the population thus withdrawn; while to Spain the wound has been incurable, as the causes of depopulation have always increased: and foreigners will never seek an asylum where they are despised, and loaden with the chains of the inquisition, or the yet heavier bonds of ignorant pride and prejudice.

Army—Navy (1806).] The Spanish armies, instead of carrying terror even into the bravest countries of Europe, as they did two centuries ago, are now neither distinguished by number, nor by discipline; the royal treasury being so much impoverished, that a large force cannot be maintained. In peace it is computed at about 60,000: but in war the number might be swelled to a great amount, by a popular monarch, and an ample revenue. Of late Spain has paid considerable attention to her navy, which has however been crippled in the recent warfare with England. The ships of the line can scarcely now be computed at more than fifty.

Revenues.] The revenue of Spain may be calculated, as is believed, at 5,500,000 sterling money; so that each person pays 10s. to government for protection. In France, under the old government, each person paid near 20s.; in England at present 60s. For the nature of the taxes the tables published by Mr. Townsend may be consulted.

[4] Townsend, vol. ii. 2, 3.

[5] Ibid. vol. ii. 214.

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The expenditure now equals, or exceeds the income ; and the national debt gradually enlarges. The best judges of the subject infer that the colonies do not yield above 1,000,000 sterling, exclusive of the duties, a great part being consumed in the expences of the government of those distant regions*.

POLITICAL IMPORTANCE AND RELATIONS.] The political importance and relations of Spain were formerly deeply impressed on most regions of the globe. But exhausted by idle wars of ambition or avarice, this fertile kingdom has become almost a cypher in European policy. Setting aside Portugal, which promises to be speedily united, the position of Spain secures her from any invasion, except on the side of France; and it becomes therefore the insuperable interest of this exhausted state to cultivate amity with her powerful neighbour, which must maintain an unavoidable and supreme ascendant, from geographic position and relative force. On the other hand the distance and importance of the Spanish colonies render a war with England the greatest calamity that can befal, as that power, enjoying the unlimited dominion of the ocean, can inflict dreadful wounds on the commerce and colonies of Spain. Such seem to be the sole hinges of Spanish polity, though ancient fame, and connections with the royal families of more potent states, secure some degree of deference to her councils and mediation.

* It is asserted that the subalterns publish exaggerated accounts of the revenues. The gabel is one of the most productive ; and the clergy pay about 15,000,000 of rials. Within these twenty years the expences exceed the receipts ; and the debt, which is always augmenting, is computed at 700,000,000 livres. MS. notes. The debt may be 50,000,000 fterling.

Bourgoing computes the revenues of Spain at 616,295,657 rials, ii. 30. He supposes the money in circulation to be 80,000,000 of dollars, ii. 64. The common rial he estimates at five sous of France, the dollar being computed at twenty rials.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Cuſtoms.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] IN speaking of the religion of Spain one of the most striking of the national customs and manners has been already mentioned, namely, the common practice of adultery under the mask of religion. This disgrace, which is confined to the Catholic system, is said to have been transplanted from Italy, where love and devotion are as warm as in Spain. But the Italian *cicisbei* are more commonly gentlemen; while in Spain the cortejos, though commonly military officers, are sometimes monks and ecclesiastics; and the vice becomes flagrant beyond conception, as it is practised by those very men who ought to exhibit examples of pure morality. It may perhaps be asserted that the Roman Catholic system in the south of Europe is the only superstition in the universe which has, at any period, necessitated the practice of vice; thus confirming the maxim that the corruption of the purest and best system is always the worst. Were the father of their faith, St. James the apostle, again to visit Spain, he would certainly begin with preaching the christian practice, as if the very idea of christianity had perished; and his first duty would be to convert the ecclesiastics.

Exclusive of this vice, the Spanish character is highly respectable, for integrity and a long train of virtues. Conscious of an upright and noble mind, the respect which a Spaniard would pay to those qualities in others, is often centered in himself, as he is intimately sensible that he possesses them. This self-respect is nearly allied to pride; but it is the pride of virtue, which certainly ought not to humble itself before vice and folly. From the same principle arises an excess of ceremony, at least as laudable as the opposite extreme of nudity and impertinence, to which some modern fanatic philosophers would reduce human nature, or in other words brutalize the species. Temperance is a virtue which the Spaniard shares with other southern nations, for wine is so inflammatory in regions exposed to the heat of the sun, that instead of an agreeable warmth, and a flow of ideas, it would produce fever, misery, and madness. In these countries the body is so much exhausted by the influence of heat, that the siesta, or short sleep in the middle of the day, becomes a necessary resource of nature, and is by habit continued even in the winter.

The chief defect in the character of the Spanish nobility and gentry is, their aversion to agriculture and commerce. Instead of those beautiful villas, and opulent farms, which enrich the whole extent of England, the Spanish architecture is almost confined to the capital, and a few other cities and towns. The metropolis is however their chief element, by traditionary custom, which arose like others from necessary causes; as in former turbulent periods their presence at court was considered as the sole pledge they could give of their duty and affection to the monarch. Now that long authority, and multiplied

multiplied distinctions, have elevated royal families far above any competition with the great nobles, it would be patriotic in the sovereign to order them to build detached villas, and to establish their chief residence in them; a maxim of prudence not unknown to James the First of England, who used to advise the great men not to haunt the court, but their own estates, where their money might be spent among the tenants who supported their opulence; adding a similitude that a ship in a fleet at sea appeared nothing, but in a river became an object of great importance. Till this event take place, and till farm houses are scattered over the kingdom, it will be absolutely impossible for agriculture to flourish in Spain. To import German colonies, as has been done in the Sierra Morena, is to begin at the wrong end, and to suppose that the poor can set an example to the rich. If, by any wise reversion of prejudices, idleness, in whatever class of men, could be branded as infamous, and the disgrace extended to opulent vagabonds, we might then be led to hope, that some thousands of Hidalgos, or sons of something, should become the more laudable sons of their own works, and contribute by trade and agriculture to promote at once their own fortunes, and the public prosperity. These remarks chiefly apply to the central provinces, for those in the north, Biscay, Asturias, Gallicia, where the Hidalgos are most numerous, are the most industrious, save those on the Mediterranean.

Since the accession of the house of Bourbon, a slight shade of French manners has been blended with Spanish gravity. But fashions have here little sway; and the prohibition of slouched hats and long cloaks led to a serious insurrection. The former prohibition was however continued, and is salutary, as the hidden countenance occasioned many nauseous customs, and even frequent assassinations. All visits are understood to be paid to the mistress of the house, the extreme gallantry of the men having reduced them to cyphers. When the Spanish ladies go to mass, which is a common occasion of their being seen abroad, they attire themselves in a *basquina*, black silk petticoat, and the *mantilla*, now a kind of veil, is often arranged with singular ease and grace. The houses of the great are not disposed with the most elegant and commodious architecture; but are so large that Mr. Townsend assigns 400 bedchambers to the Duke of Alba's palace, where all the superannuated servants, with their wives and children, were lodged; their wages been computed as 1000l. sterling a month. The cottages and inns are on the contrary, miserable: but the dress and manners of the lower classes vary much in different provinces; and for a living picture of them the reader may consult the immortal work of Cervantes.

A late ingenious traveller gives the following observations:

"It is true that in Spain women were formerly in a state of the most abject slavery, insomuch that since the general civilization of Europe Spanish jealousy has become proverbial; but in progress of time, the manners of Spain, running from one extreme to the other, are almost become more free than in any other country. Women pay and receive visits, form their tertullas at will, go to public fêtes without consulting their husbands, spend the income of their dowries as they please, and demand besides a certain proportion of pin-money, which is stipulated in their marriage articles. In a word, they not only know how to assert their rights, but enforce their pretensions with the utmost rigour. They also combine together with a kind of esprit de corps, by means of which the slightest infringement of common usage is resented as an attack or injury done to the whole sex*."

The amusements of people of rank chiefly consist in dancing and cards, and the theatre is much frequented, though the plays and music do not correspond in excellence with the national refinement. The combats with bulls in the amphitheatres have justly

* Fischer, 174.

been regarded as a striking feature of Spanish and Portuguese manners. That such spectacles tend to familiarise the people with bloodshed, seems an idle theory, unwarranted by facts. Modern Italy has no gladiators, but numerous assassins; ancient Rome had scarcely one assassin, but whole armies of gladiators. Hardly to the most weak and diseased fancy can theatrical representation present any idea connected with real life; and it seems of no moment to the national character whether bulls be killed by butchers or by champions. A French theorist infers, from the bloodshed in English tragedies, that the people are sanguinary; whereas the very reverse is the truth, and an English mob may destroy houses, but never sheds blood. Contrast this with the innocent tragedies of the French, and the sanguinary spirit of the populace, exhibited at such distant periods and from such opposite causes. The chief actors in the bull feasts are the picadors, who are mounted on horseback and armed with lances, and the chulos on foot, who relieve and sustain the former; but the chief personage is the matador, who enters amidst the profound silence of the whole assembly, and cooly dispatches the furious animal by a blow where the spinal marrow joins the head. The death is bloodless and instantaneous, and deserves imitation, as humanity would wish to save pain to the animals slaughtered for food. Sometimes the bull is pierced in various parts with darts, to which squibs are fastened, which being set on fire, the maddened animal stands pawing the ground, while he draws in and exhales volumes of smoke: sometimes an American is introduced, who, after the manner of hunting the wild bull in his own country, throws a rope around the horns, and entangles the quadruped as in a net, then kills him with perfect safety.

LANGUAGE.] The Spanish language is one of the three great southern dialects which spring from the Roman; but many of the words become difficult to the French or Italian student, because they are derived from the Arabic, used by the Moors, who for seven centuries held dominion in this country. The speech is grave, sonorous, and of exquisite melody, containing much of the slow and formal manner of the Orientals, who seem sensible that the power of speech is a privilege.

LITERATURE.] The literature of Spain is highly respectable, though little known to the other countries of Europe since the decline of Spanish power. The Bibliotheca Hispanica Antonio will completely satisfy the curious reader on this subject. Among the fathers of literature in this country must be named Isidore of Seville, many of whose works are extant, and inferior in merit to few of that epoch. Lives of saints, and chronicles, are also found, as usual, among the earliest productions; and successive writers may be traced to the 11th century, when they become numerous; but before briefly mentioning some Spanish authors posterior to that period, it will be proper to recollect that Arabian learning flourished under the Chalifs of Cordova, and produced many illustrious names well known to the Oriental scholar, as Aben Roe, or Averroes, Aben Zoar, Rhazes, &c.; nor must it be forgotten that Aben Nazan wrote a book on the learning and authors of Spain. On this subject the inquisitive are referred to the work of Casiri. Many Jewish authors also flourished in this country.

In the 11th century, as already mentioned, the Spanish authors began to increase in number, and the native language begins to appear. This was the epoch of the famous *Cid*, an Arabic term implying *lord*, Roderic Diaz de Bivar, whose illustrious actions against the Moors were celebrated in contemporary songs, and by a long poem, written in the succeeding century; which also boasts of many chronicles and much sacred biography. After the 13th century, it would be idle to attempt to enumerate the crowd of Spanish authors, among which are Alphonso the wise, who wrote a general Chronicle of Spain, and the *Libro del Tesoro*, a treatise on the three parts of philosophy, rational, physical, and moral; and at whose command were compiled the famous Alphonsine tables of astronomy, and the *Partidas*, or Laws of Castille. Raymond Lully

is said to have written no less than 319 books: they are full of metaphysical froth, and one book of real knowledge would outweigh the whole*. In the 15th century appeared Juan de Mena, a poet of surprising powers, and who unites the merits† of Dante and Petrarca. Since the year 1500 scarcely can a department of literature be mentioned, in which the Spaniards have not excelled: if we except natural philosophy, the progress of which has been checked by the inquisition. It would be unnecessary to repeat the well known names of Cervantes, Quevedo, Lope de Vega, or other authors whose works are known to all Europe. The history of Mexico by Solis has been celebrated as a composition; but in facts it is defective and erroneous. The name of Bayer in learning, and of Feyjoo in general knowledge, have recently attracted deserved respect: nor has the line of royal authors failed, an elegant translation of Sallust having been published by Don Gabriel, son of the king.

EDUCATION.] The rudiments of education in this country being chiefly imparted by antiquated methods, it cannot be expected that useful knowledge should be common. But the recent accounts of Spain have thrown so little light on this topic that it can only be generally understood by comparison with other catholic countries. It is however to be regretted that intelligent travellers have not lent more attention to this subject, more important in its consequences than any form of government: nor would it be unuseful to know that practised in Spain, in particular, as the reverse must be excellent.

UNIVERSITIES.] The universities, or rather academies, in Spain, are computed at upwards of 20; of which the most noted is that of Salamanca, founded in the year 1200 by Alphonso IX. king of Leon, and afterwards regulated by Alphonso the wise. The students have, at former periods, been computed at 16,000, sufficient to darken the face of the earth; for the reign of Aristotle in logic and natural philosophy, and of Thomas Aquinas in theology, continues unviolated, so that a student of the year 1800 may aspire to as much ignorance as one of the year 1300; and the progeny of dunces proceeds without end. In 1785 the number of students was computed at 1909[1]. The same antiquated teachers are received with implicit faith in the other universities, so that a more liberal education at school must here be obliterated.

CITIES AND TOWNS.] As a proper introduction to a brief account of the chief cities and towns of Spain, the following estimate is subjoined from an accurate author[2].

Cities — Ciudades - - -	145
Borough towns — Villas - -	4,572
Villages — Lugares - - -	12,732
Hamlets — Aldeas - - -	1,058
Granjas — Farm houses - - -	815
Cotos redondos — Parks or wastes inclosed	611
Depopulated towns - - -	1,511
Parishes - - - -	18,972
Convents - - - -	8,932

MADRID.] Madrid, the royal residence, while Seville is esteemed the capital of Spain, is of recent fame. Philip II. first established his court at Madrid; and the nobility, in consequence, erecting numerous palaces, this formerly obscure town began to assume an air of grandeur. The centrical position seems the chief advantage, for the environs can boast of little beauty or variety. The river Mancenares is in winter

* They may be aptly said to be *in folio* not *in fructu*.

† I have read Juan de Mena's poems and think meanly of them. They bear no resemblance to Petrarca in any point whatsoever, and are immeasurably inferior to Dante. (*Note communicated.*)

[1] Townsend, ii. 79. [2] Ibid ii. 215.

a torrent

a torrent, but dry in summer: over it is an elegant bridge, which occasioned a sarcastic remark that the bridge should be sold in order to purchase water. This metropolis contains 13 parishes, 7,398 houses, 32,745 families, amounting to a population of 147,543[3]. The convents are 66; and there are 15 gates of granite, many of which are elegant*. The chief is the Puerta de Alcala, of three arches, the central being 70 feet in height. The churches and monasteries contain many noble paintings, and the royal palaces display considerable magnificence. The new palace presents four fronts, of 470 feet in length and 100 in height, enriched with numerous pillars and pilasters. The foundation was laid in 1737, three years after the ancient palace had fallen a sacrifice to the flames. The audience chamber is deservedly admired, being a double cube of 90 feet, hung with crimson velvet, and adorned with a sumptuous canopy and painted cieling. The prado is a spacious course, in which the great display their elegant equipages. At Madrid are the royal manufactures of china, saltpetre, &c.; but the city has little trade, and chiefly prospers by the presence of the court, and confluence of the great, whose rents are remitted to the capital to the great injury of the kingdom at large.

CADIZ.] Next in real importance to Madrid are the principal sea-ports, which are enriched by commerce; while the cities in the interior decline from the want of agriculture and inland navigation. The commerce of America formerly centered at Seville, but was afterwards removed to Cadiz, a city which is supposed to contain 70,000 souls[4]. The two cathedrals are grand; and there is an hospital which will contain 6000 patients. The hospicio, or general workhouse, is an interesting establishment, containing more than 800 poor of all ages, who are here trained to industry.

MALAGA.] Malaga is esteemed the second port in the kingdom, and is also celebrated for excellent wines, the rich Malaga, the Mountain, so called from the hills which produce the grape, and the Tent or Tinto, so styled from its deep red tinge. Malaga stands in a valley surrounded with hills, the houses high, the streets narrow and dirty. Inhabitants about 40,000: the cathedral begun in 1528 is not yet finished: the convents are 25, but of small account[5]. The city swarms with thieves and mendicants. The muncipal government rests with a corregidor or mayor, appointed by the crown: but the regidors or aldermen are hereditary. There are also two syndicos, or tribunes to protect the people.

BARCELONA.] Towards the south-east is the third most considerable port of Spain, that of Barcelona[6]. The streets are narrow and crooked; the churches rather rich than beautiful. The hospicio contains about 1400 industrious poor, and there is a house of correction which sometimes includes even women of rank, if guilty of drunkenness or other low vices. The inhabitants of Barcelona are computed at more than 100,000; and industry prevails here, being a native virtue of the Catalonians: chief manufactures, silk, cotton, and wool, excellent fire-arms and cutlery; the chief imports, corn, fish, and woollen goods; exports, wine, brandy, cloth, and leather. During peace it is supposed that 1000 vessels enter this port; of which half are Spanish, 120 French, 100 English, and 60 Danes. Barcelona stands in a plain open to the south-east but protected by hills on the north and west, being a healthy and delightful residence; but the east wind commonly brings fog, and produces such irritability that the best friends at such periods rather wish to avoid each other.

CORUNNA.] Along the northern shores of Spain there are few harbours of any note. The most remarkable is that of Corunna, by our mariners styled the Groyn.

[3] Townsend, i. 253.

* Many of the new houses are also of granite, which is brought from the distance of 16 or 18 leagues. Fischer, 133.

[4] Townsend, ii. 374. [5] Ib. iii. 10, &c. [6] Ib. i. 106.

The

The harbour is large and safe; the town is of a circular form; but the poverty of the surrounding province of Galicia affords few resources for trade, and many of the natives are dispersed over Spain and even Portugal, as day-labourers and servants, being universally esteemed for their probity and fidelity.

The chief inland cities of Spain shall be briefly reviewed, beginning from the north. Oviedo and Leon are now inconsiderable, and only boast their ancient fame, as successive capitals of Spanish royalty, when struggling against the Moors. The cathedral at Leon is admired for its elegant lightness.

PAMPELONA.] Pampelona, the capital of Navarre, is more remarkable for the learning of some of its prelates, than for any other circumstance. The inhabitants are about 5000. Burgos, the see of an archbishop, retains vestiges of former opulence. Valladolid, in the same province of Old Castille, contains some woollen manufactures, and many goldsmiths and jewellers.

SARAGOSSA.] Saragossa, the chief town of Arragon, is the ancient Cæsarea Augusta, and displays many rich churches and convents[7]. The university contains about 2000 students. There are no manufactures, though it is to be hoped that these will be encouraged by the great canal of Arragon, projected, like other Spanish works, on a most magnificent scale, the proposed length of about 250 English miles, from the mouth of the Ebro to St. Ander in the western extremity of Biscay, thus uniting the Mediterranean with the Atlantic.

TOLEDO.] On the south of Madrid first occurs Toledo, a city of considerable fame, and remarkable situation, for the Tajo, or Tagus, passing between two mountains of granite, almost surrounds one of them, on which is placed the city, rising like a cone[8]. Toledo was formerly the royal residence; and contains a grand palace, built in the reign of Charles V. The manufacture of arms was long famous, and has been recently revived; the archbishopric is computed at 90,000l. annually; but the inhabitants, once calculated at 200,000, are now reduced to 25,000.

BADAJOS.—SEVILLE.] Badajos, in Estramadura, is remarkable for its position on the very confines of Portugal, and is the see of a bishopric. In the southern provinces appears Seville, famous till the year 1720 as the mart of American trade. The inhabitants are computed at 80,000; and the churches and convents are opulent and beautiful*. The chief manufactures silk, and recently snuffs, a royal monopoly, not only the common Spanish, but rappee, as it was found that the latter was smuggled from France. The tobacco employs 220 manufacturers, who are strictly examined and guarded. Seville is esteemed the chief *city* of Spain, Madrid being only a *town* distinguished by the royal residence[9].

MURCIA.] Murcia, the capital of the province so called, is of considerable account, and situated in one of the most beautiful vales in Spain[10]. The inhabitants are computed at about 80,000, more probably 60,000. There is a beautiful bridge over the Segura; and the cathedral is lofty, but cannot boast of internal opulence or beauty[11].

GRANADA.] Granada has been long celebrated as the paradise of Spain, though the southern provinces be in general unhealthy. This city stands in a vale bounded by hills, beyond which to the south is the Sierra Nevada, so called because the mountains are covered with perpetual snow. The inhabitants supposed to be 80,000; the Moorish palace here has been already described; and adjoining is a palace erected by

[7] Townsend, i. 205. [8] Ibid. i. 303.

* The author was favoured at Paris with the perusal of some manuscript notes concerning Spain by a diplomatic man of good information. In these notes the population of Seville is estimated at 70,000, Barcelona at 90,000, Toledo at 20,000.

[9] Dillon, 432. But the population at Madrid and Barcelona is far superior.

[10] Townsend, iii. 150. [11] Ibid, iii. 55.

Charles

Charles V. The cathedral and convents contain excellent pictures by Spanish masters. The muncipal government is in a corregidor, and 24 regidors. There are beautiful public walks; and the environs are delightful and well cultivated*.

EDIFICES.] The most remarkable edifices of Spain are the cathedrals of the several sees, and the churches belonging to opulent convents. The houses of the nobility are confined, with few exceptions, to the capital and other cities, instead of adorning the country at large as in England. This circumstance however tends, in Spain and Italy, to impress a stranger with erroneous ideas concerning the abundance of works of art in these countries; while the seeming opulence arises in great part from their being concentrated in particular spots, instead of being diffused in distant villas. The palace and monastery of the Escurial have been described at great length by many travellers. It is seated in a deep recess, at the foot of high mountains; and was built by that bigot Philip II. in the strange form of a gridiron, the instrument of the martyrdom of St. Lawrence, upon whose anniversary the Spaniards gained the victory of St. Quintin. The convent is 740 feet by 580; and the palace forms the handle of this imaginary gridiron. The paintings are excellent and numerous; and the vault containing the royal tombs is grand and impressive. But the palaces of Aranjuez and St. Ildefonso are greater favourites with the court. The gardens of the former, watered by the Tajo, are laid out in a just and natural taste. St. Ildefonso is a summer residence, exposed to the north; and being built on a rocky soil is computed to have cost 6,500,000 sterling. The Pardo, another palace, stands in the midst of a large forest.

INLAND NAVIGATION.] Colonies proved the ruin of Athens; and the attention paid to foreign colonies is always detrimental to the parent state. This political axiom may most justly be applied to Spain, which has in fact been exhausted and impoverished by grand and rich colonies. Hence the natural advantages of the country have been sacrificed to commercial speculations; and the miser starves amidst accumulated wealth. In his able work, the best yet published, concerning Spain, Bourgoing has given a detailed account of the canals of this country. They are generally on a most magnificent scale, and are of course objects of long time and much expence. One was to pass from Madrid to join the Manzanares with the Tagus, and thus facilitate the communication between the capital and Aranjuez, but only two or three leagues are finished†. That of Castile, begun long ago, is almost abandoned. In 1784, the government adopted the project of a canal from the mountains of Guadarama to the Tagus, thence to the Guadiana, and to end at Guadalquivir above Andujar, which would of course enliven all the centre of Spain. It is supposed this canal will be carried into effect. At present the chief canal is that of Arragon, passing not far from Saragossa, where there are magazines for various articles transported, and six beautiful locks at no great distance. The most expensive part is where the canal is conducted above the river Xalon for a space of 710 fathoms. Near Gallur, a village on the Ebro, the canal is conducted through considerable heights, but this part is the work of Charles V., who began the canal of Arragon, though it was not resumed till 1770. Afterwards entering the kingdom of Navarre, near Formigales, the Ebro joins the

* Gibraltar, so called from a Moorish or Arabic denomination, signifying the mountain of Tarik who conducted the Moors into Spain, stands on the west side of a rocky mountain, called Calpe by the ancients: and to the west of the town is a large bay. In 1462 it was taken from the Moors; and in 1704 fell into the hands of the English. The siege during the American war is of fresh and celebrated memory. The inhabitants of the town are about 5000; and the garrison generally amounts to as many. The number and strength of the military works, and the vast galleries opened in the calcareous rock, excite admiration. There is a stalactitic cave, that of St. Michael; and bones are found in the rock, which seem to have fallen into the cavities, where they are enveloped in the exuding petrifaction. The fortress, in the opinion of most military men, is absolutely impregnable.

† Bourgoing, i. 324.

canal

canal, or rather feeds it by 11 apertures in a pier, 118 fathoms long and 17 broad. Here are several handsome edifices finished in 1787. The whole reflects the highest honour on Spanish industry and magnificence, and the utility of the canal has already been attested by the experience of 20 years; in 1792, it yielded about 2,000,000 rials, and the value of the adjoining estates has been raised in the surprising degree of 50 to one. Yet this grand canal is stopped about a league below Saragossa, and is even neglected! It was to have entered the Ebro at Sastago, but in 1793, of 34 locks, only six were finished: and the projected length was of 26 Spanish leagues, or 104 British miles, from Tudela to Sastago, where the Ebro becomes navigable, the least depth being nine feet, and the largest barks may carry 2700 quintals*. But the central canal would be of still more consequence; and if the example of England were followed, fertility and trade might be diffused in all directions through the inland and barren provinces of Spain. This object may even be recommended as of all others the most worthy of the attention of the government.

MANUFACTURES AND COMMERCE.] The manufactures of Spain are considerably checked by the royal monopolies, which extend to the following articles[12]:

Broad cloth, at Guadalajara and Brihuega.
China, at the palace of the Buen Retiro.
Cards, at Madrid and Malaga.
Glass, at St. Ildefonso.
Paper, in Segovia.
Pottery, at Talavera.
Saltpetre, at Madrid and various other places.
Stockings, at Valdemoro.
Swords, at Toledo.
Tapestry, at Madrid.
Tissue, at Talavara.

The king has also the monopoly of brandy, gunpowder, lead, quicksilver, sealing-wax, salt, sulphur, and tobacco. Most of the royal manufactures may be regarded as monopolies; no private capital being able to vie with the treasury. It is possible that the first intentions were laudable; to set an example to the nobility of the advantages of industry; but in this respect they have failed, and the consequences have added to the national distress. Many manufactures are however conducted in Spain with great spirit and assiduity; and any failure must not be imputed so much to the indolence of the people, as to the prejudices of the great, and the inquisitorial power of the ecclesiastics, which cramps genius and invention of all kinds, and constrains the mind to the same perpetual circle. Spain supplies wines, oil, fruits, silk, leather, broad cloth, and other articles to many European countries; but her chief trade is with her own colonies in America. The soil of Spain is exuberant in the production of saltpetre; and the barilla, used in making glass, has been long celebrated. This species of potash is procured by burning several vegetables found on the shore of the Mediterranean near Carthagena[13]. The region which produces the greatest abundance extends about sixty leagues in length and eight in breadth. Spain is supposed not to gain considerably by her intercourse with her colonies, for the gold and silver imported flow like water from the parent rock in the vales, naturally proceeding towards countries were labour is cheaper, and which supply Spain with necessaries in return for the precious metals.

* Bourgoing, iii. 45.
[12] Townsend, ii. 240. The famous *vicuna* cloth is only made at Guadalaxara. Bourg. i. 114.
[13] Ibid. iii. 131.

In the year 1784 the exports from Spain to America were thus computed in pounds sterling [14]:

	Spanish Produce.	Foreign Produce.	Total Produce.
Cadiz - -	1,438,912	2,182,531	3,621,443
Malaga -	196,379	14,301	210,680
Seville - -	62,713	30,543	93,256
Barcelona -	122,631	21,240	143,871
Corunna -	64,575	39,962	104,537
Santander -	36,715	90,173	126,888
Tortosa -	7,669	289	7,958
Canaries -	24,974	- -	24,974
Gijon -	4,281	10,190	14,471
	£1,958,849	£2,389,229	£4,348,078

The duties were computed at 170,800l.

The imports from America to Spain were, at the same time thus, estimated in the same money:

	In Money and Jewels.	In Merchandise.
Cadiz -	8,297,164	2,990,757
Malaga -	- - -	18,605
Barcelona -	102,140	91,233
Corunna -	741,283	90,001
Santander -	40,843	100,974
Canaries -	109,807	52,366
	£9,291,237	£3,343,936

The whole imports therefore exceeded twelve millions and a half: the duty amounted to more than half a million *.

[14] Townsend, ii. 415.

* M. Bourgoing informs us, ii. 197, that the customs which in 1778 were 6,761,291 rials arose in 1788 to 55,456,949, so beneficial had been the effects of the regulation in 1778 for the greater freedom of commerce. In 1791, ib. 208, there had arrived in Spain from Peru and Mexico 22,000,000 dollars.

For a singularity in recent Spanish commerce, the history of the Company of the Philippines, the same author may be consulted, tom. ii. p. 249, &c. This company was established in 1784, with a stock of 8,000,000 dollars, and carries a trade round the globe, passing by Cape Horn, and returning by the Cape of Good Hope. But this extent in itself may probably prove ruinous.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Spain has been deservedly praised, as equal if not superior to that of any country in Europe; but in the southern provinces the heat is insalubrious, and malignant fevers sometimes sweep off great numbers. This disaster probably originates from the neglected state of the country, from stagnant marshes which might, if properly drained, supply running streams and verdant meadows. The south-east wind from Africa, called Solano, has such inflammatory effects that it is said more murders are then committed during three days than throughout the rest of the year[1]. The chains of mountains which pervade Spain at different intervals, from east to west, seem to temper the climate, and supply cooling breezes. In the south the sea breeze, beginning about nine in the morning and continuing till five in the evening, agreeably diversifies the warmth of the summer; and in the northern provinces the severity of winter is allayed by the proximity of the ocean, which generally supplies gales rather humid than frosty.

FACE OF THE COUNTRY.] The face of the country is in most seasons delightful, abounding with excellent and fragrant pasturage, vineyards, and groves of orange trees; and the hills clothed with wild thyme and other odorous plants. The rivers and streams are numerous; and the chains of mountains afford a grand variety to the prospect.

SOIL AND AGRICULTURE.] The soil is generally light, and reposes on beds of gypsum or plaister of Paris, itself an excellent manure. "The common course of husbandry[2] about Barcelona begins with wheat; which being ripe in June is immediately succeeded by Indian corn, hemp, millet, cabbage, kidney-beans, or lettuce. The second year these same crops succeed each other as before. The next year they take barley, beans, or vetches; which coming off the ground before Midsummer, are followed, as in the former years, by other crops, only changing them according to the season, so as to have on the same spot the greatest possible variety." Wheat produces ten for one; but in rainy seasons 15. The same intelligent author informs us that near Carthagena the course is wheat, barley, and fallow[3]. For wheat they plow thrice, and sow from the middle of November to the beginning of December; in July they reap from 10 to 100 for one, as the season happens to be humid. The Huerta, or rich vale of Alicant, yields a perpetual succession of crops. Barley is sown in September, reaped in April; succeeded by maize, reaped in September; and by a mixed crop of esculents which follow. Wheat is sown in November, and reaped in June; flax in September, pulled in May. In the vale of Valencia wheat yields from 20 to 40; barley from 18 to 24; oats from 20 to 30; maiz 100; rice 40: In the more southern provinces the land is almost equally fertile: and the sugar-cane is

[1] Dillon, 308. Townsend, &c. [2] Towns. i. 179. [3] Ibid. iii. 134.

cultivated with success near Granada. The Spanish plough is generally light, and is drawn by oxen with the yoke over the horns; the most proper and natural mode, as the chief strength of the animal centres in the head. Agriculture is greatly impeded in Spain by the superior attention paid to the large flocks of sheep, which are authorised by a special code, the Mesta, to travel from one province to another, from Andalusia to Arragon, as the season presents pasturage in the vales, or on the mountains. The Merino sheep, or flocks thus privileged, are computed at 5,000,000; and one nobleman has sometimes 40,000. The fleece is esteemed double in value to that of other sheep: but the checks given to agriculture by such privileges, unknown to all other countries, are incalculable *.

Rivers.] Among the chief rivers of Spain may be named the Ebro, which anciently conferred an appellation on the country. This noble stream rises in the mountains of Asturias, in a small vale east of Reinosa, and pursuing its course to the south-east enters the Mediterranean sea, after having run 380 geographical miles. The other rivers running to the east are of less importance, as the Guadalavir, the Xucar, and the Segura, which enlivens the fertile vales of Murcia. Towards the west occurs the Guadalquivir, the ancient Bætis, which gave name to the province. This river originates in the Sierra Morena, and flows into the Gulf of Cadiz, after a course of near 300 geographical miles. The Guadiana rises in the north side of the Sierra Morena, according to Spanish authors, though the chief sources seem rather to be in the mountains of Toledo: it pursues a part of its course through Portugal, and falls into the Gulph of Cadiz, after a circuit nearly equal to that of the Ebro. But the chief river of Spain and Portugal is the Tajo, or Tagus, which rises on the west of Arragon, near Albarracin, in a spring called Abrega †, and holds a course of about 450 geographical miles. The Douro springs near the ruins of ancient Numantia; and its course may be computed at 350 geographical miles. The Minho rises in the mountains of Galicia; and is more remarkable as forming a part of the boundary between that province and Portugal, than for the length of its circuit, which does not exceed 160 geographical miles. Many other streams pervade the northern provinces, but not of sufficient importance to be here commemorated.

Lakes.] The lakes of Spain are so few, and of such small extent, that they scarcely deserve notice. There is a singular series of small lakes in the south-east of New Castile, to which some assign the source of the Guadiana.

Mountains.] The Spanish mountains are arranged by nature in several distinct chains. The most northern is regarded as a continuation of the Pyrenees, passing on the south of Biscay and the Asturias into Galicia. This chain is distinguished by different names, as the mountains of Biscay, the Sierra of Asturias and the mountains of Mondonedo in Galicia. It is also known by the names of the mountains of Santiliana, of Vindo, and of the mountains of Oca [4]. If we except the Alps, Pyrenees, Appennines, and other chains in countries civilized at an early period, and accustomed to general and scientific views, there is scarcely a range of mountains distinguished by an uniform term, though so necessary in geographic elucidation. It must also be here observed that the term *Sierra*, peculiar to Spain, implies a chain of mountains whose successive peaks present the resemblance of a *saw*. The gypseous and argillaceous mountains of this country, rarely exhibiting any su-

* All the provinces of Spain produce wine. The only sugar plantations are near Motril on the coast of Malaga. Wood is scarce in the two Castiles, Estramadura, and Leon. The cables of the Spanish vessels are made of *esparto* from Murcia. MS. notes.

The old Sherry wine, *Xerez seco* (Fischer, 314.), is the Sherry *sack* of Shakspere.

† Near the Sierra Blanca, esteemed the highest situation in Spain, as the Guadalaviar runs into the Mediterranean. Dillon, 208.

[4] Journal des Mines, An. v. 391.

preme

preme elevation, like those in the granitic chains, naturally suggested this singular appellation.

The second chain of Spanish mountains extends from near Soria on the north-east, and pursues a south-west direction towards Portugal. This chain is called that of Urbia, or Guadarama; and also the *Montes Carpentanos**. The third is that of Toledo, or Guadalupe, running nearly parallel with the last. These two central chains seem to contain great quantities of granite.

Next towards the south is the Sierra Morena, or Brown Mountains, which are followed by the most southern ridge, that of the Sierra Nevada.

On the east there is a considerable chain, which connects the two central ridges, and advances towards the Mediterranean in the north of Valencia. There are also several considerable ranges of hills in this part of the kingdom, generally running from north to south.

MONTSERRAT.] A remarkable solitary mountain, not far from Barcelona, must not be omitted. At a distance Montserrat appears like a sugar-loaf; but on a nearer approach seems jagged like a saw, with pyramidal rocks: it is composed of farcilite or pudding stone, formed of limestone gravel united by calcareous cement; and is of such a height that from its summit may be discerned the islands of Majorca and Minorca, at the distance of 50 leagues[5]. The circumjacent region is of argillaceous schistus, with clay and sand. As the Pyrenees are chiefly calcareous, the pebbles, even to a remote distance, are of the same nature; and this hill seems to have originated in some unaccountable manner, from materials swept down by primeval waters from the Pyrenees; as those near Oban in Scotland, from the granitic chain in that country: the only difference being that of the materials, which compose the farcilite, in the one instance calcareous, and in the other siliceous. Not far from Montserrat, near the village of Cardona, is a hill three miles in circumference, which is one mass of rock salt; used in the dry climate of Spain for vases, snuff-boxes, and trinkets, like our Derbyshire spar.

PYRENEES.] The Spanish side of the Pyrenees has not been accurately examined; and as the French mineralogists have amply illustrated the part belonging to France, an account of these mountains has been given in the description of that country. In the want of a general and scientific account of the Spanish mountains, a few notices must suffice, extracted from different parts of Mr. Townsend's travels. According to that intelligent observer the northern side of the Pyrenees is chiefly calcareous, surmounted with argillaceous schistus; but the southern is granite, and of course barren[6]. The hills to the south of Gerona are also granitic. The highest ridge in Spain, near Daroca, whence originate the Tajo and the Ebro, seems composed of argillaceous schistus, and freestone, probably resting on granite[7]. Near Anchuela the mountains are limestone with shells; and sometimes contain beds of red gypsum with crystals of the same colour. In general gypsum is as abundant in Spain, as chalk is in England; and the gypsum produces chrystals of sea salt and Epsom salt, and abundance of nitre. The mountains on the north of Madrid, forming part of the central chain, are granite[8]. Those to the north of Leon chiefly marble, or limestone, on a basis of argillaceous schistus, rising in bold and rugged rocks, which afforded a barrier to the remains of Spanish liberty. In returning towards the south the soil of La Mancha is sandy, the rock gypsum. The higher regions of the Sierra

* Dillon, p. 115, says the mountains, dividing the two Castiles, are called those of Guadarama. The northern chain might be called that of Oca, the other that of Toledo or Villuercas: the eastern ridge that of Burgos.

[5] Towns. i. 189. Cape de Gata is about 20 miles in extent. One hill is of brown basalt; another presents sapphires and alabandines, as Launoy, a French naturalist, who visited it, informed the author.

[6] Towns. i. 89. [7] i. 219. [8] i. 356. ii. 107.

Morena are granite[9]; the lower argillaceous schistus, with gypsum and limestone. The granite is of two kinds, the red and the white[9]. Near Cordova the highest hills are covered with rounded masses of granite, grit, and limestone. Near Malaga are branches of the Sierra Nevada, or snowy chain, an appellation which might also be extended to the central range between Old and New Castile, which, according to Mr. Townsend, might at some time be visible at the distance of 100 miles: these branches present limestone and marble, surmounted by argillaceous schistus. Near Alhama south-east of the city of Granada, are found rocks, which on a basis of shingle or round gravel, present sandstone with shells, surmounted with farcilite; but in general the rocks are gypseous, with strata of the same substance crystallized. Mr. Townsend[10] supposes that the power of the sun contributes to impregnate chalk with vitriolic acid, thus forming gypsum. The south-east part of Spain seems equally calcareous, and the cathedral of Murcia is built with pisolite, a sort of freestone resembling the roe of fish. The aventurine is found in the mountain of Gata, towards the frontiers of Portugal; the Cape de Gata presents also some singularities, and appears to some travellers to have been volcanic.

Forests.] Spain contains many forests, or rather chaces, for trees are rare, partly arising from the want of cultivation, partly reserved for the royal pleasures of the chace; as that of the Pardo, which extends near 30 miles in length, but barren of trees; some of the forests are haunted by smugglers, and banditti, who raise contributions from the unwary travellers, and even murders are not unfrequent.

Botany.] Although the great promontory south of the Pyrenean mountains is divided by its political interests, into the independent governments of Spain and Portugal, yet the distribution of the different kinds of soil, and natural products, is so little conformable to the territorial division, that an account of the botany of either country must necessarily include the great outlines of the other: it will therefore save much repetition to unite the two kingdoms in a general sketch of the botany of the whole promontory *.

Spain, including by this term the whole country south of the Pyrenees, may be divided according to its botany into the sea-shore; the high mountains; the lower ones; the arable lands; the grazing tracts and marshes along the rivers; and the vicinity of Lisbon and Oporto.

The sea-shore of Spain presents fewer peculiarities than the interior; resembling for the most part in its vegetable productions the northern coasts of the Mediterranean: the flat sandy tracts are occupied by the pancratium maritimum, *sea daffodil;* festuca maritima, and elymus caput medusæ, two coarse kinds of grass; salicornia fruticosa, *shrubby glasswort*, and salsola soda and sativa; of the last of these there are extensive plantations in the neighbourhood of Alicant and Barcelona, for the purpose of procuring from its ashes the Spanish barilla, an alkaline salt of considerable purity, of which some thousand tons are every year manufactured, partly for foreign commerce and partly for the preparation of the fine Spanish soap. The rocks on the coast are chiefly calcareous, and abound with *samphire; tree violet; tragacanth vetch;* the majestic antirrhinum Lusitanicum; *caper bush;* and stipa tenacissima, the celebrated esparto grass, which, on account of its extraordinary toughness, is used for making ropes, mats, chair-bottoms, and, in short, all the articles included under the French term *sparterie.*

The high mountains of Spain being neither so lofty, nor in such large masses as those of Swisserland, are covered with snow only for a few weeks in the year; here therefore, and in the lower mountainous ridges that border the bay of Biscay, we find

[9] Towns. ii. 290. 297. [10] iii. 49. 52.

* Quere, Flora Espanola-Löfling, Iter Hispanicum.—Vandilli, Floræ Lusitanicæ Specimen.—Dillon's Travels.—Link's Travels.

a num-

a number of plants familiar to the plains of the north of Europe; the finest timber trees in Spain are found in these elevated regions, and the English botanist might here almost think himself in his native country.

The long ranges of moderate sized hills that occupy the greatest part of Spain consist either of extensive arid tracts of sand, of arenaceous sand-stone, and ferruginous rubble forming the heaths; of calcareous districts forming the sheep-walks; or of moist rough granitic and marble ridges, with but a shallow soil forming the woodlands.

The Spanish heaths are gayer and richer with plants than those of any other European country; in some parts are thick woods of the *yew-leaved fir* and *stone pine*, in others are scattered groves of *cork trees;* here the traveller is regaled with the fragrance of numberless aromatic plants, the *mastich thyme; spike lavender;* origanum heracleoticum; *common* and *Spanish sage;* and *rosemary*. The golden blossoms of the *gorse*, ulex Europæus, a plant chiefly found in England and Spain, and the crimson flesh-coloured, and snowy flowers of the arborescent *heaths*, mutually heighten each other; now the stately growth of the juniperus oxycedrus, or phœnicea attracts attention; then the eye turns with delight to the humble dianthus caryophyllus, *clove July-flower*, glowing by its side; the elegant lithospermum fruticosum entangles itself among thickets of dwarf-myrtle, and every spot of sand or dry rock, forsaken by other vegetables, is adorned and perfumed by the cistus; of this plant there are no less than 14 species, natives of Spain, all of them eminently beautiful for their broad silken blossoms of pure white or yellow with deep crimson eyes: the *laurel-leaved cistus*, is most frequent in Old Castile, but the commonest of all is the cistus ladaniferus, *gum cistus*, a most elegant and fragrant shrub from six to seven feet high, which occupies whole miles of dry rock, and on this account forms a very peculiar feature in the scenery of Spain.

The sheep-walks are for the most part open downs with little shelter, except here and there a grove of chesnut trees, or evergreen oaks; the turf differs essentially from that of the English sheep-walks in containing very few species of grass, being chiefly composed of the smaller papilionaceous plants.

The woodlands of Spain demand particular notice, in an account of its vegetable productions; we find here none of that noon-day night of shade that spreads such an awful solemnity over the recesses of the German and English forests, the trees are neither so large nor is their foliage so ample; several of the calcareous summits are covered with chesnut trees and box, but the great mass of the woods consists of the *evergreen sweet oak*, this tree is about the size of a large pear tree, which it somewhat resembles in its manner of growth; its leaves are lanceolate, green above and hoary beneath, curled and rather scanty; it produces large crops of sweet acorns, which are extensively applied to the fattening of hogs, and the nourishment of the peasants: intermixed with these are the wild olive, the kermes oak, walnut and carob tree; the almond fixes itself in the crevices of the rocks along with the *sumach;* the laurel, the bay, the laurustinus and Portugal laurel attain the height of small trees, and yield a cool and shady retreat even in the midst of a Spanish summer.

Where the ground is sufficiently deep and moist for cultivation and rich pasturage, a number of beautiful bulbous-rooted plants appear early in the autumn and spring, and give a peculiar gaiety at that time to the Spanish prospects; two species of asphodel, the ramosus and fistulosus, may be said in a manner to overspread the whole country, many also of the following are scarcely less common: *yellow amaryllis; autumnal snow-flake; jonquil;* narcissus tazetta, bulbocodium and serotinum: *clustered hyacinth; orange* and *mortagon lily;* polyanthus tuberosa, and *wild tulip*. Several strong smelling umbelliferous plants are also natives of Spain, such as *fennel;* ferula communis,

which yields the gum sagapenum; and ferula ferulago, from which galbanum is procured. The fallows and dry thickets abound with the *fan palmetto ; yellow lupin ; spiked fumitory ; Spanish* and *white broom.* In the hedges, and by the shady road-sides, are found the *laurel, winged iris ;* atropa mandragora ; smilax aspera ; three species of *fox-glove ; pæony ;* and *common passion flower.*

Both Portugal and Spain are for the most part deficient in water ; the rivers flow through rocky channels, and therefore there are few marshes, and still fewer bogs : the sides of rivulets are adorned with the oleander, laburnum, tamarisk, and myrtle, which in these situations grow with unusual luxuriance ; with the iris pumila, cyperus longus and esculentus, arundo donax, *Spanish reed,* and pinguicula Lusitanica.

The vicinity of Lisbon and Oporto, and of a few other towns on the coast, is remarkable in botany for a number of Indian, African, and American plants, which have gradually strayed out of the gardens, and have become completely naturalized to the soil and climate ; the hedges of the fields are not unfrequently formed entirely of the *American aloe,* and *Indian fig ;* the rich soil on the bank of the Tagus glows with the splendid scilla hyacinthoides, the ornithogalum Arabicum, and the allium speciosum ; and the sheltered groves and sunny rocks of Belem present the stately magnolia ; the *date palm ;* a beautiful kind of cypress originally from Goa ; tea-tree from China ; *Cape jasmine ; ice plant,* and several others of the same genus from the Cape of Good Hope; and the fragrant myrica Faya, from Madeira. Of the esculent plants and fruits cultivated in Spain and Portugal, besides those already mentioned, the following are the chief : *wheat* and *barley ; rye* and *rice,* in small quantities ; *oats,* scarcely at all ; *maiz ; Guinea corn ; millet,* in considerable quantities ; *sweet potatoe, plantains, chick pea, lupin, Monk's beans,* dolichos catjang ; all the varieties of *gourds, cucumbers,* and *melons ; figs ;* grapes, oranges, lemons, bergamot oranges, and all the finer fruits of our English gardens.

Zoology.] The glory of Spanish zoology is the horse, which has been famous in all ages, probable originating from the barb, or beautiful spirited steed from the north of Africa, the immediate offspring of the Arabian. The Spanish mules are also excellent, and the ass is here no ignoble animal, though not equal to that of Arabia ; whence a far superior breed of this useful quadruped might be introduced. The cattle seem little remarkable ; but the breeds of sheep have been long celebrated as perhaps superior to any in the world, some for the delicacy of the mutton, and others for the beauty of the fleece. The purity of the air and aromatic pasture, no doubt contribute to both qualities, which it is to be suspected, would degenerate on transportation. Spain produces one or two quadrupeds and some birds, not known in the rest of Europe, as the Viverra genetta, the Vultur percnopterus, the Cuculus glandarius, the Tridactyla, the Motacilla Hispanica, and the Hirundines melba, and rupestris, all of Linnæus, the latter also found in Carniola*.

Mineralogy.] The mineralogy of Spain was anciently of more importance than in modern times. Pliny[11], after observing that silver was generally found with galena or lead ore, proceeds to state that the fairest of all silver was found in Spain, where the pits, begun by Hannibal, lasted to his time, being known by the names of their original discoverers. That called Bebelo had yielded to Hannibal 300lb. weight a day, a mountain being pierced for a mile and a half, through which the workmen directed large streams of water ; so that the plan pursued seems to have been that called hushing by modern writers. Strabo[12] informs us that the province of the Turditani, modern Andalusia, was the most productive of precious metals ; and gold, silver, brass,

* The Spanish locust has generally rose-coloured wings, and seems indigenous. Dillon, 286.

[11] Lib. xxxiii. cap. vi.

[12] Lib. iii.

and

and iron were no where found more abundant, nor of better quality: gold was found in the sands of the rivers and torrents, a known attribute of the Tagus. His account also leads us to infer that hushing was the method practised. That geographer adds, that though the Gauls affected to prefer their precious metals, which were found in Mount Cemmenus, chiefly towards the Pyrenees, or that part of the Cevennes which lies near Foix, yet the Spanish were doubtless superior, lumps of pure gold being sometimes found half a pound in weight; but it was frequently discovered in the state of electrum, or mingled with silver. Strabo also mentions gold and silver mines among the Artabri in the north of Portugal; and Polybius informs us concerning the mines of silver near Carthagena, which occupied a number of workmen, and yielded to the Romans 25,000 drachms daily. Other mines of silver were found near the sources of the Bætis. This intelligence becomes of the more importance, as Britain and other regions of the west certainly derived their gold and silver from Gaul and Spain, in return for cattle, hides, and other products.

At present almost the only silver mines in Spain are those of Guadalcanal, in the Sierra Morena, but rich veins of that metal, in a fuliginous state, exist in many places[13]. At Almaden in La Mancha are valuable mines of quicksilver, which are chiefly remitted to Spanish America, and employed in refining the more precious metals. Calamine appears near Alcavas; cobalt in the Pyrenees; antimony in La Mancha; copper on the frontiers of Portugal *; tin in Galicia; and lead is common as in many districts. The iron of Spain is abundant, and still maintains its high character; and coals are found in the district of Villafranca, in Catalonia, where also occur gold, silver, copper, and lead[14]. Amber and jet (in Spanish *azabache*) are found together in the territory of Benlocia in the Asturias. The amber is bedded in slate, and presents a woody appearance, but when broken there are white nodules, enclosing the substance which is of a bright yellow. The other minerals are rather curious than important, such as the beautiful crystallised sulphur found at Conilla not far from Cadiz, the elastic marble of Malaga, the green marble resembling the Verde Antico found near Granada, and the red gypsum with red crystals of Compostella. Murcia produces that fine red earth called *almagra*, with which the Spanish snuff is mingled[15]. The aventurine seems a Spanish name, and a Spanish discovery, being a felspar sprinkled with golden mica, discovered in Arragon and near the mountain of Gata, as already mentioned, but fine specimens are also brought from Piedmont; and according to some late mineralogists, the richest are the Russian, from the little isle Cedlovatoi in the White Sea †.

MINERAL

[13] Journal des Mines, An. v. 317, &c.

* See Dillon, 196, for an account of the copper mine of La Platilla, near Molina. At Rio-tinto there is a rich mine of copper. MS. notes.

The richest lead mine is at Linarez in Jaen. Bourg. ii. 97.

[14] Towns. iii. 344, 345.

[15] J. des M. Ib.

† The following note is extracted from a work called *Heber den Bergbau in Spanien*, &c. by J. M. Hopensack, Weimar, 1796, 8vo.

No tin mines are worked but in Gallicia; the veins of ore run through granite. The lead mines at Linares are the richest in Spain; the veins run also through granite. Iron mines are worked in most of the provinces; and particularly in Biscay. There are mines of antimony in Caslette and Gallicia. At the southern bottom of the Sierra Morena there are whole hills composed of very beautiful pudding-stone, mixed with fandy red clay. Below Azuago there are coal mines, which supply coals for the furnaces of Almaden. There is scarcely any province of Spain which does not contain coals. Those of Catalonia, however, are the only ones worked. The mountains of Granada produce very beautiful native sulphur. All the eminences round Cadiz, in Andalusia, abound with swine-stone mixed with native sulphur. At Alcanis, in Arragon, there are manufactories of alum and sulphate of iron. In the Bishopric of Oviedo a great many agates are cut to make buttons.

MINERAL WATERS.] Spain contains many mineral waters, but few are celebrated. The hot springs of Rivera de Abajo are situated not far from Oviedo, and bear some resemblance to those of Bath. Near Alicant are the baths of Buzot, warm springs of a chalybeate nature, rising like the former among calcareous hills.

NATURAL CURIOSITIES.] The natural curiosities of Spain have been little illustrated. The rock of Gibraltar, as is well-known, in some parts contains bones which have been supposed to be human; but are now discovered to belong to quadrupeds, and to have been deposited in the fissures from above. This rock is chiefly calcareous, and on the west side is a stalactitic cave called St Michael's. The river Guadiana, rising in a calcareous country, appears and disappears like some of our streams in the north of England under similar circumstances. A deep and rugged dale near Alberca, in Estramadura, once attracted great notice from the singular manners of the inhabitants[16].

SPANISH ISLES.

MAJORCA.] The chief circumjacent islands belonging to Spain are Majorca, Minorca and Eviza; or according to Spanish orthography Mallorca, Menorca, Ibiza. Majorca is about 55 English miles in length, by 45 in breadth. The north-west part is hilly; the rest abounds with cultivated land, vineyards, orchards, and meadows; the air is temperate, and the honey highly esteemed: there is generally a considerable military force in the isle. The capital, seated on a fair bay, is an elegant city, and is supposed to contain 10,000 inhabitants. Here was born the famous Raymond Lully, a visionary of the 14th century. Majorca was re-conquered from the Moors by James I. king of Arragon, in 1229. In 1262 it was assigned to a prince of the house of Arragon: James the first king died in 1311, aged 68; and was succeeded by Sancho; who in 1324 was followed by James II., defeated and slain in 1349 by the army of the king of Arragon, to which crown the isle reverted. James II. king of Majorca drew up a code of Palatine laws, for the domestic government of the palace, which is still extant.

Spain may be considered as one of the countries best favoured by nature in regard to mineral riches, but they have hitherto been much neglected. Their annual products are about

16,000	quintals	of	mercury
250	-	-	copper
31,000	-	-	lead
175,000	-	-	iron
2,500	-	-	vitriol (sulphate of iron)
14,000	-	-	alum
750	-	-	sulphur

The gold and silver mines have never yet been worked; though there are veins of both these metals in Estramadura, and the mountains of the Sierra Morena. The quicksilver mines of Almaden are very old. They are mentioned by Pliny, in whose time the cinnaber was sent to Rome in the form of powder or sand. These mines are worked in the same manner as those of Germany. A few leagues from Almaden there are three other establishments for extracting quicksilver from its ore, namely Almadenejos, Guadalperal, and Las Cuebas. The diseases to which the miners here are subject are said to arise not so much from their occupation as from the insalubrity of the air, and the irregularity of their lives, which bring on tremors that are incurable.

Since the year 1524 there have been extracted from these mines about 150,000 quintals of quicksilver. The present produce sometimes is 20,000 quintals per annum, without including 60 quintals, which are sent annually to Seville, either in the state of vermilion or under the form of sealing wax, which contains .070 of quicksilver. Nearly 1000 workmen are employed here.

[16] Dillon, 270.

MINORCA.] Majorca is generally in too strong a state of defence to admit of an easy conquest, but Minorca has been repeatedly seized by the English, to whom it presents an advantageous station for the Mediterranean trade. It is about 30 miles in length, by about 12 of medial breadth. The air is moist, and the soil rather barren, being chiefly calcareous, with lead, and fine marble. The wine is praised; and the inhabitants retain a share of their ancient reputation as excellent slingers. Cittadella, the capital, has a tolerable haven, but the population and fortifications are of little consequence. Port Mahon on the south-east has an excellent harbour; and received its name from Mago the Carthaginian general.

Eviza is the nearest to Spain, about 15 miles long and 12 broad. It is remarkable for its fruits, and abundance of excellent salt *.

* The *red* chiefly is exported. MS. notes.

TURKEY IN EUROPE.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names.—Extent.—Boundaries.—Original Population.—Progressive Geography.—Historical Epochs and Antiquities.

THE Turkish empire, once so formidable to Europe, has lately sunk before the power of Russia; and may probably, at no very distant period, be utterly annihilated, or reduced to a few Asiatic provinces. Yet ancient fame conspires with the remaining extent and population of the Turkish dominions, to entitle this power to a place among the preponderating sovereignties both of Europe and Asia. Turkey in Europe is computed to contain 182,560 square miles; an extent which exceeds that of Spain, or even France under the ancient monarchy; and must therefore be still classed among the leading powers even of this quarter of the world.

NAMES AND PROVINCES.] As European Turkey forms a recent sovereignty, the greater part of which was subjugated in the fifteenth century, after the fall of Constantinople and of the Byzantine empire, there is no ancient appellation for its whole extent. It embraces many ancient kingdoms and republics, which now only afford a melancholy remembrance of classical names and events. Moldavia, the most northern province, was part of ancient Dacia, and Jassy, or rather Yassy, according to the indigenal pronunciation, the capital, was the *Iassiorum Municipium* of the Romans. Budzac, or Bessarbia, was a country of the Getæ and Peucini. Walachia was also a province of the ancient Dacians; while Bulgaria on the south of the Danube embraces nearly the two provinces of Mæsia. Romelia, a vast territory, contains ancient Thracia, Pæonia, Macedonia, and the northern part of the classical country of Greece; while the Morea is equivalent with the ancient Peloponnesus. To the west of Romelia extends Albania; which includes the kingdom of Epirus, Chaonia, and a part of Illyricum. Dalmatia retains its ancient appellation: while Servia and Bosnia represent ancient Pannonia. Turkish Croatia, the most western province of the empire, also forms a portion of ancient Pannonia, with perhaps a small district of Noricum; but the Turkish part of Croatia is a diminutive province, about 40 miles in length by 20 in breadth, limited by the river Save on the north, and partly by the river Unna on the west.

In recent times Turkey has lost the provinces of the Krim, and new Servia, which, with several Asiatic districts, have become subject to Russia; and on the west Transylvania, Sclavonia, with the Buckovin a part of Moldavia, and a great part of Croatia, have fallen under the power of Austria.

Arrowsmith direxit.

From Arrowsmith's Map of Turkey in Europe.

Lowry sculp.

Published March 1st 1802, by Cadell and Davies, Strand, and Longman and Rees, Paternoster Row.

EXTENT.] Turkey in Europe extends about 870 miles in length, from the northern boundary of Moldavia, to Cape Matapan in the Morea. The breadth, from the river Unna to Constantinople, is about 680 British miles. The eastern and southern boundaries are formed by the Euxine or Black Sea, the sea of Marmora, the Archipelago, and the Mediterranean. The utmost northern limit is now the river Dniester; but the western often consists of an arbitrary line, and is sometimes supplied by rivers or mountains.

ORIGINAL POPULATION.] The original population of this empire chiefly sprung from the ancient Scythians on the Euxine, the progenitors of the Daciens, Thracians, &c. and even of the Greeks. These were originally blended towards the north, with many Sarmatic or Slavonic tribes: and on the fall of the Roman empire the latter spread more and more towards the south, so that nearly one half of the population may now be regarded as Slavonic; but Walachia is supposed to contain many descendants of the ancient Roman settlers in Dacia. The extent of the Turkish empire has contributed to mingle this original population with various Asiatic races, among whom the Turks themselves deserve particular mention. That branch called the Ottomans, which has proved so destructive to Europe, derived their name from the Sultan Othman, who reigned in the beginning of the fourteenth century, and extended his sway into the plains of Bithynia, in which he conquered Nicomedia and Prusa, and thus approached even to the gates of Constantinople [1]. But the name and power of the Turks are of far more remote antiquity. They are supposed to have descended from the Altaian mountains in Tatary, about the middle of the sixth century; and spread gradually towards the west, till they reached the lake Mæotis [2]. Yet the strength of the empire restricted them to the region near the river Oxus, whence the Chalifs derived their Turkish guards, who afterwards subverted the throne of Bagdad. The Hungarians, who spread destruction through great part of Europe in the tenth century, are known to have been a branch from the Finnish stem. The Turks, or Turkomans, properly so called, spread from the Oxus and Samarcand to the east of Persia, where Mahmoud of Gazna established a powerful kingdom, subdued by the Turks of Bochara, who in the eleventh century founded the dynasty of the Seljuks. The sultans of this race gradually extended their power towards the west, and Armenia and Georgia were among their first acquisitions in the Byzantine empire; the continuation of which seems remarkable, when it is recollected that the Turks had almost subdued the whole of Asia Minor, before the commencement of the twelfth century. Yet the progress of the Crusades checked the extension of the Turkish sway, and by the capture of Nice constrained them to remove the seat of power to Iconium. Towards the middle of the fourteenth century the Turks first passed into Europe; and soon after seized the greatest part of Thrace. In the beginning of the fifteenth century their sultan Bajazet extended his conquests even to the Danube; and the provinces of Thrace and Macedonia, fell under the Turkish sceptre, while Adrianople became the seat of their government.

From this deduction it will appear that it was chiefly with European troops that the Turks finally subverted the Byzantine empire. From the diversity of nations which joined their standard, from intermarriages with women of Circassia, and many other circumstances which need not be here recapitulated, the modern Turks may be regarded as a mixture of many races of men. If they originally sprung from the Altaian mountains, as the best records induce us to believe, they seem to have formed a part of the nations styled by the ancients "the Scythians beyond the Imaus;" and their subsequent settlement on the Oxus must have swelled their population with Sogdian and Bactrian tribes.

[1] Gibbon, xi. 432.

[2] Ib. vii. 284.

PROGRES-

PROGRESSIVE GEOGRAPHY.] The progressive geography of Turkey in Europe is reflected in the greatest lustre from the classical pages of antiquity, and through the annals of the Byzantine empire to modern times. It would be idle to repeat the well-known geography of ancient Greece, and of the regions to the north of that illustrious seat of arts and letters. Under the Byzantine empire, in the tenth century, they equalled any European provinces, or *themes* as they were quaintly denominated; and while that of the Peloponnesus contained no less than 40 cities, we lament the devastations of the Ottoman barbarians, whose only power is to destroy, and whose baleful sway extinguishes all industry and prosperity. The Turkish division into provinces has been already stated; and it may perhaps be speedily the office of geography to repeat the new provinces established by the Russians and Austrians.

HISTORICAL EPOCHS.] It would be equally difficult and unsatisfactory minutely to state the historical epochs of this extensive dominion, containing so many ancient kingdoms and states. It shall therefore be only premised that, after the Roman arms had subdued these countries and cities, many of which are celebrated in the most ancient pages of history, they became in the fifth century an important part of the Byzantine empire; and the historical epochs most appropriated to the present design will delineate their gradual subjugation by the Turks.

1. The first dawn of Turkish history preceding the reign of Othman, A.D. 1299.

2. In the reign of his successor, Orkan, the Turks take Gallipoli, and penetrate into Thrace; which province was soon after conquered, and Adrianople was taken A.D. 1360. Two years afterwards the sultan Amurath established the famous military bands called janizaries, composed of Christian slaves educated in Mahometanism from their infancy.

3. The reign of Bajazet, who defeats the Hungarians at Nicopoli, in Bulgaria, A.D. 1396. In 1402 the famous battle near Ancyra, between Bajazet and Timur, which for a period checked the Turkish power: yet in 1412 the Emperor Sigismund was defeated by the sultan Mousa with great slaughter.

4. The Turks continue to encrease their dominion in Europe, though they received severe checks from the Hungarians under Hunniades, and even from the Albanians commanded by the celebrated George Castriota, called by the Turks Scanderberg.

5. Constantinople taken by the Turks on the 29th of May 1453. In 1456 the siege of Belgrade by Mahomet II. Corinth and the Morea became subject to the Crescent A.D. 1458. In 1480 Otranto in Italy was taken by the Turks, an event which diffused great terror throughout Europe.

6. A considerable accession to the Turkish power by the conquest of Egypt, A.D. 1517. In 1522 Rhodes submits to the Turks: the knights were afterwards transferred to Malta. In 1526 the noted battle of Mohatz, in which Lewis king of Hungary perished; and the Sultan Soliman soon after took Buda. In 1529 he besieges Vienna at the head of 250,000 men, but the city being bravely defended by Frederic, prince palatine, the Turks withdrew with great loss. In 1552 the Turks seized the Bannat of Temeswar: and took Cyprus from the Venetians in 1571.

7. In the same year was the famous naval battle of Lepanto, which delivered Europe from any apprehension of the Turks by sea. They continued however to invade Hungary with various success. But their wars with Persia gradually diverted their arms from Europe. In 1642 the sultan Ibrahim took from the Cossacs the town of Azof at the mouth of the Don. Towards the middle of this century, they seized some Grecian isles, which the naval power of the Venetians had enabled them to retain.

8. Mahomet IV. renews the wars against the emperor of Germany; and in 1663 the Austrians were defeated in Hungary. The isle of Candia is taken in 1669 after a long

a long blockade and siege. Wars with Poland. The siege of Vienna, 1683, raised by John Sobieski king of Poland. Hungary became the scene of repeated Turkish and Austrian conquests, till 1699, the peace of Carlovitz, by which the Turks yielded Transylvania to the Austrians, the Morea to the Venetians, and Azof to the Russians.

9. In 1736 a successful war with the Russians and Austrians; the Turks by the peace of 1739 resumed Belgrade and Orsova, with some parts of Servia and Walachia, formerly ceded to Austria; and Russia is constrained to abandon Azof.

10. The more recent wars of the Russians against the Turks, and the subsequent decline of the Ottoman empire.

Some of the events here commemorated are comparatively minute; but the Turkish power has been so destructive, wherever it spread, to the best interests of humanity, that even the smaller ramifications of such a pestilence seem not undeserving of being commemorated, with the same curiosity that natural historians describe the utmost extent of an earthquake.

ANTIQUITIES.] The ancient monuments of European Turkey are well known to exceed in number and importance those of any other country. The remains of ancient Athens, in particular, formerly the chosen seat of the arts, have attracted the attention of many travellers, and have been so repeatedly described that any further comment would be superfluous. A venerable monument of antiquity at Constantinople, the church dedicated to the divine wisdom, or vulgarly Sancta Sophia, by the emperor Justinian in the sixth century, has been fortunately preserved, by being converted into a mosk, though the architecture be greatly inferior to that of the classical period, yet the effect is grand and impressive, and the cupola is admired as a bold and skilful effort of the art, while the seeming weight is diminished by the lightness of the materials, being bricks formed of a particular clay which will float in the water[3]. The interior is adorned with a profusion of marble columns, of various beautiful descriptions, the purple Phrygian, the Spartan green, the red and white Carian, the African of a saffron colour, and many other kinds. The other antiquities of Constantinople, and other parts of European Turkey, would occupy many pages in the bare enumeration, which would be little gratifying to the reader, whose curiosity will be better satisfied by the prints, than by any description of such objects, which can never convey distinct ideas. Suffice it here to observe that the French have recently discovered the remains of the ancient sea-port belonging to Sparta, near a barren promontory, which projects from the south of the Morea; and that the antiquities and geography of that part now styled Albania, still present a field of research to the enterprizing traveller.

[3] Gibbon, vii. 120. This clay is chiefly magnesia.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE religion of the Turks is the Mahometan: but of their subjects, in this division of the empire, it is probable that two thirds are Greek Christians; a circumstance which would facilitate and endear the domination of the Russians, who follow the same persuasion. The religion of Mahomet has been recently clearly from many erroneous representations; but its pernicious effects are sufficiently visible in the destruction of art and industry, wherever it has made its appearance. The exclusive attachment to the Koran, the rigid fanaticism, and the contempt for profane knowledge, conspire with the devout hatred against all unbelievers, to prevent any intercourse with other sects, and thus to erect a barrier against every branch of science and industry. While the Mahometans regard all other nations as dogs, to use their own expression, it is no wonder that they themselves should sink into an ignorance and apathy truly brutal. This single principle of usurped superiority must ever render them inferior to other nations; but as the Turkish Sultan has been for some centuries the chief leader and support of this devouring system, of which his subjects themselves begin to perceive the defects, it is to be conceived that his fall would considerably weaken the Mahometan faith; and that those proud usurpers of all human virtue and merit would find their former arrogance returned with due contempt by surrounding nations. The Mufti or Mahometan pontiff presides at Constantinople; but his power has seldom interfered with the civil government. Next to him in rank are the Moulahs, who, though esteemed dignitaries of the church, are in fact rather doctors of the law, while the Koran is also a code of civil observance, and is expounded in numerous treatises which regulate the proceedings of the ecclesiastic judges [1]. From the Moulahs are selected the inferior Muftis, or judges, throughout the empire; and the Cadilesquiers (Cadi-el-askar) or chief justices.

The next class of divines are the Imaums or parish priests, who perform the service of the mosks, while the Cadis are judges annually appointed to administer justice in the towns and villages, being themselves to be regarded as churchmen, who like the Moulahs have directed their chief attention to the juridical part of the Koran.

From this brief view it will be observed, that the ecclesiastical orders of Muftis and Imaums somewhat resemble the Christian bishops and parochial clergy: while the other distinctions arise from the singularity of both religion and laws being united in the Koran, so that a lawyer or judge must at the same time be a skilful divine.

The Turks have also their monks, styled Dervishes, of various orders and institutions, dedicated by solemn vows to religious offices, public prayer, and preaching. A most singular order is that of the Kadri, who appear almost in a state of nudity, and affect to display their devotion by frantic and extravagant dances.

[1] Porter's Observations on the Turks, p. 41, &c.

The

From Arrowsmith's Map of Greece.

The Greeks, along with their faith, retain their priests, bishops, archbishops, and patriarchs; but their church is in the last state of degradation, and its dignities openly sold by the Turks. Travellers have expressed the deepest regret at this abomination, arising partly from the Mahometan delight in rendering the Christians contemptible: and partly, it must be confessed, from the miserable ambition and avarice of the Greek ecclesiastics, who think they can atone by idle ceremonies for the neglect of all the invaluable morality of the gospel.

Ecclesiastic Geography.] The ecclesiastic geography of these degraded regions must of course be only interesting to the mere antiquary, as it can throw no light on its history, and little even on its topography.

Government.] The Sultan is a despotic sovereign; but he is himself strictly subject to the laws of the Koran, which including also the national religion, raise such obstructions to his absolute will, that an intelligent traveller pronounces many Christian sovereignties more despotic[2]. Yet the same author allows that, in order to secure private property, the reversion is commonly assigned to the church, which would thus in time swallow up all the estates and possessions of the empire. In no European country has the government ever been so despotic that a recourse to similar practice became necessary. But it appears that the despotism of the monarch is balanced by a religious aristocracy; and not to mention the insurrections of Janizaries or Prætorian bands, the common peril of every despotic administration, the recent disasters have greatly infringed the power of the Sultan: for many Pashas have usurped the sovereign power over their own provinces, and set every effort of the Porte at defiance, than which there cannot be a stronger symptom of the perdition of the empire.

Laws.] The Turkish laws, as has been already mentioned, are contained in the Koran, and in the comments of approved and renowned doctors. As unhappily no religious system has ever made its first appearance amid a great and enlightened nation, but only in small tribes, and in the first steps of the social progress, so the laws of the Koran, however well adapted to a few poor and simple Arabs, yet as Mahomet had no vision of the glories of Bagdad, Ispahan, Samarcand, Delhi, Cairo, Cordova, or Constantinople, his code little provides for the advanced stages of society. To supply this defect, successive Moulahs of high reputation, using the Koran as a kind of text, have constructed commentaries which have acquired the force of laws. The Turkish empire is chiefly guided by those of Abou-Hanife. As a due skill in these commentaries requires considerable study, ecclesiastics versed in this science became in some degree a distinct body from those merely dedicated to the priesthood. The laws concerning property are sufficiently equitable; and it is a gross mistake to suppose that females do not inherit; but it would be vain to deny that the avarice of the Pashas, and the venal disposition of the priests, would overleap the barriers set even by Mahomet, and much more those appointed by his commentators. The written laws of a country may be excellent, while the mal-administration leads to every oppression; and the most enlightened travellers leave no doubt that any decision may be purchased from a Turkish judge. Where both parties have nothing to give, and the judge is free from caprice, perhaps a shadow of justice may be expected.

Population.] Turkey in Europe has been computed to contain 8,000,000 of inhabitants; and the extent being supposed 182,560 square miles, the allotment will be 43 to the mile square. It is probable that this number rather exceeds the truth, when it is considered that these regions are intersected by many mountainous and barren tracts; and that the population even of the best provinces impresses all travellers with a striking defect.

[2] Porter, p. 76.

Colonies.] A Turkish colony would be a contradiction in terms, as, far from any thought of improving distant regions, they are busy in destroying their own.

Army.—Navy.] The Turkish army and navy may deserve more particular consideration under the head of Asiatic Turkey, as the chief sources fall under that division. It may here be briefly remarked that there are about 30 ships of the line; while the army, after the defection of many Pashas, can scarcely exceed 150,000, ill-disciplined, and dispirited by successive disasters; and more destructive to their own provinces, through which they must pass, than to any state with which they are at enmity; more terrible to their friends than to their foes. The navy is of little consequence.

Revenues.] The revenues of the whole Turkish empire are computed at about 7,000,000 sterling, while the usual expence does not exceed five. This revenue is partly derived from the capitation tax on unbelievers, and from the *zecchat* or customs; but principally from the tax on land, amounting to about six shillings an acre, and which is called the *jizie*. The Sultan is also supposed to possess a considerable private treasure; which, when called forth by the exigencies of the state, will probably be found of as small account as the treasures of similar fame which fell into the hands of the French. A more real treasure may be expected from the arbitrary exactions from the rich, particularly the Christians.

Political Importance and Relations (1806).] The palpable and rapid decline of the Turkish empire has of course greatly impaired its political importance. At the beginning of the sixteenth century, when European politics began to assume some consistency, France, being alarmed by the growing power of the house of Austria, entered into an alliance with Turkey, the repeated subject of murmur among the Christian powers. Nor was this alliance of much advantage to France, except in securing a more favourable mercantile reception in the Levant; for the diversions thereby afforded to the Austrian arms were seldom well timed, or of much importance. This long alliance has been recently violated by the imprudence of the French rulers who chose to attack Egypt by open force, without the consent of the Porte, which deriving little or no advantage from that nominal sovereignty, would gladly have given it to France as a reward for any active services. In consequence of this violation the Porte joined the Austrians and Russians, in the war against France; but the Crescent did not appear on the French frontiers. In virtue of this alliance Russian squadrons of war have passed the sacred walls of the Seraglio; and inspected as friends that weakness which may assist them as enemies. Politicians considered this alliance as a mere temporary friendship, produced by violent circumstances; and it is probable that not many years will elapse before Russia and Austria again conspire against European Turkey. The Turks are sensible that a strict alliance with Prussia would be of singular advantage to them; that power can have little interest in such a treaty, but must on the contrary rather exult to see the power of Russia exerted against Turkey and Asia. Meanwhile the Turks have spared no endeavour to secure the friendship of several European powers, and have appointed resident ambassadors at several courts, who may be regarded as heralds of their fall; for in their prosperity they disdained to send any envoys, and regarded the ambassadors of the Porte as tributary slaves, sent to solicit the protection of the Sultan. Amidst the defection of several Pashas, in the east as well as in Europe, it is fortunate for the Ottoman empire that the power of Persia is dormant.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the Turks are distinguished by the peculiarity of their religion from those of other European nations. On the birth of a child the father himself gives the name, putting at the same time a grain of salt into its mouth [1]. The circumcision is not performed till the age of 12 or 14. Marriage is only a civil contract, which either party may break, and is managed by female mediation, the youth seldom seeing his bride till after the ceremony. The dead are perfumed with incense, and buried in a cloth, open at the top and bottom, that the deceased may be able to sit up and answer the questions of the angels of death. The burial-grounds are near the highways; and stones are often placed at the head of the graves, with carved turbans denoting the sex. As they never intrench upon a former grave, the cemeteries are very extensive. In diet the Turks are extremely moderate, and their meals are dispatched with great haste. Rice is the favourite food, and is chiefly dressed in three ways; the pilau, boiled with mutton or fowl; the lappa, or mere boiled rice; and the tchorba, a kind of broth of the same vegetable. In boiling the meat is cut in small pieces; and in roasting still smaller, a bit of meat and an onion being placed alternately on a very small spit. The fish of the Archipelago are excellent; and the beef tolerable, except that of the buffalo, which is very hard. The hares, partridges, and other game are of superior flavour. The meal is usually spread on a low wooden table, and the master of the house pronounces a short prayer. The frugal repast is followed by fruits and cold water, which are succeeded by hot coffee and pipes with tobacco. The houses of the Turks are seldom expensive; and the chief furniture is the carpet which covers the floor, with a low sofa on one side of the room. In regard to dress, Tournefort [2] observes that the use of the turban is unhealthy, because the ears are exposed, and its thickness causes perspiration. The shirt is of callico; and the loose robe is fastened by a girdle, in which is stuck a dagger; while the tobacco bag, pocket-book, &c. are worn in the bosom. The robe is generally of European broad cloth, trimmed with various furs. The shoes, or rather slippers, are slight, and unfit for much exercise. The dress of the women differs little from that of the men, the chief distinction being the head-dress; that of the fair sex consisting of a bonnet, like an inverted basket, formed of pasteboard covered with cloth of gold, or other elegant materials, with a veil extending to the eyebrows, while a fine handkerchief conceals the under part of the face. The personal cleanliness of both sexes is highly laudable; but the European eye is not pleased with the female custom of

[1] Tournefort, i. 47.

[2] Ibid. i. 79.

staining the nails with a red tincture. The amusements of the Turks partake of their indolent apathy, if we except hunting, and those of a military description. To recline on an elegant carpet, or in a hot season by the side of a stream, and smoke the delicate tobacco of Syria, may be regarded as their chief amusement. With opium they procure what they call a kief, or placid intoxication, during which the fancy forms a thousand agreeable images, but when the dose is too potent these are succeeded by irritation and ferocity. Chess and draughts are favourite games; but those of chance are considered as incompatible with strict morals. The coffee-houses, and the baths, furnish other sources of amusement; and the bairam, or festival which follows their long lent, is a season of universal dissipation.

LANGUAGE.] The Turkish language is of far inferior reputation to the Persian or Arabic, being a mixture of several dialects, and possessing neither the force, elegance, nor purity of those two celebrated oriental tongues. Literature is not however totally neglected, and it has been repeatedly attempted to establish a printing press at Constantinople; but the design failed from the interest of the copyists, who inferred that this art would deprive them of their bread. A late traveller [3] informs us that there are in this capital several *kuttub-chans*, or public libraries, among which are those of Saint Sophia and the Solimanie Jamasy; but none so elegant as that founded by the grand vizir Raghid, which is wholly built of marble in the midst of a square court, and is filled with books chiefly theological. A librarian constantly attends, and there are convenient seats with carpets and cushions. In the neighbourhood is a school founded by the same vizir, in which about 100 boys are taught to read and write. The market for books is extensive, containing many shops well supplied with oriental manuscripts. The Turks have their ancient poets, historians, and divines; but of little reputation when compared with those of Persia or Arabia.

EDUCATION.] The state of education among the Turks may be conceived to be very low, and ignorance is indeed a chief part of the national character. The only profession which requires a shadow of learning is that of the law, which, as before explained, is intimately connected with their theology. The celebrated doctors have disciples, who are trained up to that department; but there seems nothing that can deserve the name of college or university.

CITIES AND TOWNS. — CONSTANTINOPLE.] The chief city of European Turkey, and of the Turkish empire, is Constantinople, so called because founded by Constantine, on the site of the ancient Byzantium. The advantages of the situation can hardly be exceeded, and the aspect from the sea is peculiarly grand; but on a nearer approach the wooden hovels, and narrow streets, disappoint the splendid expectations of the spectator. The beautiful description by Gibbon is known to every reader; and recent travellers have applauded its accuracy [4]. This capital forms an unequal triangle, resembling a harp, being about 12 or 14 English miles in circumference, enclosed by walls, and on two sides by the sea, and the harbour called the Golden Horn. The inhabitants are computed at 400,000, including the four suburbs, Galata, Pera, Tophana, and Scutari. Of these 200,000 are Turks; 100,000 Greeks; and the remainder Jews, Armenians, and Franks. The most celebrated edifices are the Seraglio, which comprizes a large space crowded with various buildings of mean architecture; and the mosk of Sancta Sophia, already mentioned. The principal entrance of the Seraglio is styled Capi, or the Porte, an appellation which has passed to the Turkish court. The frequent visitations of the pestilence, and the confla-

[3] Browne, p. 422.

[4] Dallaway's Const. 15.

grations

grations often kindled by popular discontent, render Constantinople an unpleasant residence.

ADRIANOPLE.] Next in dignity and extent is the city of Adrianople, formerly the European seat of the Turkish dominion. This city, which stands about 140 British miles to the north-west of Constantinople, was founded by the emperor Hadrian on the site of the ancient Orestias. It is washed by the Hebrus, now the Maritz, which here receives two tributary streams [5]. This second city of European Turkey is of a circular form, surrounded by a wall and towers. Many of the houses are respectable, but the streets are narrow and indirect. The seraglio is in a pleasant situation, separated from the city by the river Arda, and commanding an extensive view of the country, which is fertile, and remarkable for excellent vines. Several of the mosks are of celebrated splendour, and the commerce of the city by the river is not inconsiderable *.

Filibe, or Filipopoli, is meanly built, without fortifications, or one good street; the situation being so low and moist, that the mud is sometimes two feet deep, and stones like posts are set up to facilitate the progress of foot passengers. Yet it is a city of considerable size [6].

SOFIA.] The city of Sofia, situated in a low country north-west from Adrianople, is of considerable trade, but meanly built: the inhabitants are computed at 70,000.

Silistria in Bulgaria, on the river Danube, is computed to contain 60,000 souls; while Bucchorest, the chief city of Walachia, is estimated at the same number; but Jassy, or Yassy, the leading town of Moldavia, and Bender of Bessarabia, are only estimated each at 10 or 12,000.

BELGRADE.] Belgrade, the capital of Servia, repeatedly disputed between the Austrians and Turks, is now destitute of fortifications, but is supposed to retain about 25,000 inhabitants. Banjaluka in Bosnia is also a considerable town, supposed to contain 18,000 souls.

SALONICA.] In the more southern provinces must first be named Salonica, computed at 60,000, a city of considerable commerce, seated on a noble gulph of the Archipelago. About 80 British miles to the south is Larissa, an inland town, but supposed to contain 25,000 souls. Atini, the ancient Athens, is of small population; and this region of classical cities now scarcely presents another town worthy of commemoration in general geography.

EDIFICES.] Exclusive of the seraglios and royal palaces, which themselves possess little claim to architectural grandeur or beauty, the chief edifices in Turkey are the mosks and caravanseras. The most beautiful mosks are those of the capital, and Adrianople, and are generally kept in excellent repair, as the church possesses ample revenues for that purpose, and the interest and honour of the clergy are promoted by preserving their splendour. The caravanseras, on the contrary, are often neglected. These buildings are generally in the form of a square, enclosing a court; the upper chambers being destined for travellers, and the lower for horses and camels. They are often founded by legacies of the opulent; but the trustees, having no personal interest, generally squander or alienate the funds allotted for their support, so that these useful edifices, some of which boast superior elegance, are permitted to fall into shameful decay.

MANUFACTURES AND COMMERCE.] The manufactures and commerce of Turkey in Europe are chiefly in the hands of foreigners; but as what is called the Levant

[5] Busching, iii. 340.

* Add, from the information of a late traveller, in MS., that this city is nearly two miles in circuit, unfortified: on the south-east is a large mosk on a hill, whence the city slopes to the north-west.

[6] MS. information.

trade almost entirely centers in Smyrna, and the Asiatic shore, this subject will be more properly described in that part of this work which relates to Asia. The native manufactures exported from European Turkey are inconsiderable, being chiefly carpets, and a few other articles; but the rude products are far more numerous, as currants, figs, saffron, statuary marble from Paros, silk, and drugs.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE extensive regions comprised within the limits of European Turkey enjoy, in general, a delicious climate, pure air, and regular seasons. Ovid, who was banished to modern Bulgaria, has written many elegiac complaints on the severity of the clime; and it seems an undoubted fact that the seasons have become more genial, since Europe has been stripped of those enormous forests, which diffused humidity and cold: for countries, anciently represented as full of morasses and water, are now dry and salubrious; and the rivers are not only confined to narrower channels, but many that used to freeze every winter now devolve a turbid but free stream. The climate of Moldavia, which Ovid would have painted like that of Lapland, is now little inferior to that of Hungary, though the western part be mountainous, and the eastern present many uncultivated deserts. In Walachia the air is so temperate that vines and melons prosper. In the mountainous parts of the more southern districts the temperature must partake of the cold, universal in such elevated regions; but the products of Macedonia and Greece, rice, vines, olives, shew that the climate retains its ancient praise.

FACE OF THE COUNTRY.] The general appearance of Turkey in Europe is rather mountainous; but abundantly interspersed with delicious plains and vales: and to the north-west of Constantinople there is a plain country of vast extent, while the shores of the Euxine present many level deserts. Besides the grand stream of the Danube many large and beautiful rivers intersect these provinces, and the numerous gulphs of the Archipelago and Mediterranean diversify and enrich the country.

SOIL AND AGRICULTURE.] The soil is generally fertile, the northern parts producing wheat and rich pasture, the middle and southern abundance of rice. But agriculture, like every other art and science, is neglected by the Turks; and that soil must be truly fertile which under their sway can support its inhabitants.

RIVERS.—DANUBE.] Among the rivers of European Turkey must first be named the Danube, which from Belgrade to Orsova divides Servia from the Bannat, a space of near 100 miles; and afterward becomes a Turkish stream for more than 400, being in some places a mile in breadth, and presenting, if possessed by an industrious people, all the advantages of a Mediterranean sea.

MARITZ.] Next perhaps in importance, though very inferior, is the Maritz, or ancient Hebrus, which rising in a chain of mountains anciently called Hæmus, and running towards the east and south, falls into the Ægean sea, after a course of about 250 miles. The same sea at the gulph of Salonica receives the Vardari, the ancient Axius, which rising in mount Scardus, a western branch of the same chain, pursues a south-east course of about 200 miles.

ESKER.—MORAVA.] Two other rivers of similar consequence flow into the Danube. The Esker, the ancient Oeskus, rises near the source of the Maritz, but its course little exceeds 120 miles; while the Morava, the ancient Margus, runs about 200. The Drin, another considerable river, rises to the north of Albania, and falls into the Save,

Many other streams of classical name pervade these regions; but they often derive their sole importance from their historical and poetical reputation.

LAKES.] Budzac and Walachia contain some lakes of considerable extent, as those around Ismail, and that to the east of Surza, which communicates with the Danube, or forms a part of that river. Nor are Albania, and the southern provinces, wholly destitute of lakes, but rather of classical fame than geographical importance.

MOUNTAINS.] The chains of mountains are numerous and extensive. To the west of Moldavia and the Bukovine runs north and north-west for about 200 miles part of the grand Carpathian chain, anciently called the Bastarnic Alps, from the Bastarnæ, an extensive nation, partly of Gothic and partly of Sarmatic origin. The most southern branch of this grand chain, tending south-west for more than 200 miles, forms the north and west boundary of Walachia. Ptolemy here delineates mount Peucé, which seems the same with the Bastarnic Alps; while the southern branch may be his Sarmatic mountain; nor do the mountains between Walachia and the Bannat seem distinguished by any modern appellation, except of particular summits, as the Graysor, the Pietrotza, the Semenek.

HÆMUS.] On the south of the Danube appears the grand range of the Hæmus, which Ptolemy represents as running from the south-west to the north-east, while modern observations indicate the opposite direction; but the recent maps of these regions are still very imperfect. D'Anville, in his Ancient Geography, considers the Rhodopé as a chain of mountains on the western side of ancient Thrace; and the Hæmus as its northern frontier: but this distinction is unknown to Ptolemy, who on the contrary places the Rhodopé towards the north of Thrace, representing it as a branch of the Hæmus. However this be, the chain of the Hæmus is deservedly celebrated by the ancients, being of great elevation and extent as appears from the numerous and large rivers which devolve from its sides. The middle parts of this chain were by the ancients called Scomius and Orbelus; while the Scardus may be considered as its furthest branch on the west. If with D'Anville we place the *Hæmi extrema*, the furthest eastern point of the Hæmus at Emineh, and thence extend it above Filipopoli and Sofia to the south of Servia, we shall find an extent of more than 400 miles, now known under various names, as Emineh, or Hemineh Dag, perhaps a remnant of the ancient appellation, on the east; Bulkán and Samoco in the middle; Ivan west; while the Despoto Dag branches off to the south-east and may perhaps be the Rhodopé of the ancients. But while the proper delineation and description of mountains, though some of the most fixed and important features of nature, and distinct and appropriated appellations for their chains and branches, remain grossly defective in other provinces of European geography, it is not a subject of surprize that great obscurity should be found even in the classical regions, which now form a part of the Turkish empire*.

ATHOS.] From the western extremity of the Hæmus seem to branch off two other extensive chains; one running north-west between Dalmatia on the west and Bosnia and Servia on the east: while the other passing south forms the mountains of Albania and the west of Greece. The northern chain begins with the Scardus of the

* Among the few travellers who have visited parts of Mount Hæmus, is Dr. Brown. See his Travels, London, 1673, 4to. p. 44, &c. He only observes that one of the minerals is talc; and that the chain is supposed to extend from the Euxine to the Adriatic. As no summit of the Hæmus seems covered with perpetual snow, the elevation cannot be considerable.

ancients,

ancients, continued by the Bussinius and the Albius, an account of which more properly belongs to the Austrian dominions. The chain running to the south has many classical appellations, as the Acroceraunian, Pindus, &c. The east and south of Greece are also crowded with small chains of mountains, and solitary hills, such as Olympus, Ossa, Pelius, and others. Mount Athos, a detached summit in the north east, is of considerable height, but has chiefly attracted observation from its singular form, so much resembling that of Montserrat in Spain; and from the many monasteries and churches on the declivities of its picturesque pinnacle.

Forests.] There are considerable forests in various parts of European Turkey; but travellers have not distinguished them by particular descriptions.

Botany.] While all the Christian countries of Europe have been surveyed with more or less accuracy either by the independent zeal of their native naturalists, or under the honourable patronage of their respective governments, the Turkish empire, containing the most celebrated and beautiful provinces on the face of the earth, has been almost wholly excluded from the researches of modern botanists. That jealousy of strangers, the result of conscious weakness in the government, and of profound ignorance and the meanest superstition in the people, which has uniformly characterized the Ottoman domination, has prevented those visits to Greece and the provinces south of the Danube which the memory of their ancient glory, and the pure love of science and nature, would have induced. Hence it is that the flora of European Turkey remains in so miserably imperfect a state. The distant regions of India, Japan, and Australasia, the sultry desarts beyond the Cape of Good Hope, the pestilential swamps of America, and the forlorn expanse of Siberia, have been penetrated by the indefatigable zeal of the Linnæan school; their animals, minerals, and vegetables have been in a considerable degree described and arraigned: while the cradle of civilization, the birth-place of those arts and sciences that have raised the nations of Europe to so proud an elevation above the rest of the world, has been trodden for ages past by barbarian feet. The vegetable tribes that clothe the rocks of the Cretan Ida, and shade the summits of Athos and Oeta, that adorn with their varied tints the vale of Tempe and the plains of Thessaly, that bask on the sunny shores of the Ægæan, or rise in stately luxuriance on the banks of the majestic Danube, succeed to each other, generation after generation, unknown and unregarded. A few hasty gleanings, chiefly from the maritime parts have been brought home by travellers*; but of the botany of the interior, especially of those provinces which lie between the Danube and the Archipelago, we are almost wholly ignorant.

The forests of Greece, the Greek islands, and the provinces bordering the Archipelago to the north, consist of the common and yew-leaved fir, the larch, the cedar, the ilex, the kermes oak, the common oak, the oriental plane-tree, the maple, the sycamore, the walnut, the chestnut, and the beech. The principal fruit-trees are the olive, considerable forests of which, mixed with the broad-leaved myrtle, adorn the shores of Crete and Attica; the orange, the fig, the vine, the pistachia tree, the mastich tree, the mulberry, and the pomegranate. Of the shrubs and smaller trees the most worthy of notice are the bay-tree, the laurel, two kinds of *arbutus*, the cypress, the *oleander*, and the caper bush. A large proportion of the soil in Greece and the Greek islands being calcareous, either of the purer kind of marble and lime-stone, or of the mixed, as effervescent trap, a large proportion of the Greek flora in its present imperfect state consists of those plants that are peculiar to lime-stone districts; the lower accessible ridges in Crete are principally marble and other calcareous rocks, hence this island has always been celebrated for its vegetable productions; of which the following

* Forskal, Flora Constantinopolitana.

are the chief, and all of them indicative of a calcareous soil: *stachys Cretica*, Cretan wound-wort; thistle-leaved acanthus; Cretan origany; Cretan dittany; *astragalus tragacantha*, tragacanth vetch, from which the gum of this name is procured; *salvia pomifera*, apple sage; *cistus ladaniferus*, ladanon cistus, an elegant shrub, from the leaves and tender stalks of which the fragrant gum ladanon exudes; this is collected by whipping the plants with leathern thongs to which the gum adheres, and off which it is scraped from time to time.

Zoology.] The zoology of European Turkey presents few peculiarities. The jackal, frequent in Africa and Asia, is not unknown in these regions; and among the beasts of burden must be classed the camel. The Turkish horses are celebrated for spirit and form; and those of Walachia deserve particular praise. Of cattle and sheep there is little deficiency, but the particular breeds or qualities have been little explained. The sheep distinguished by the name of Walachian, have spiral horns of singular elegance; but the fineness of the fleece would be a more useful distinction.

Mineralogy.] The mineralogy of these provinces is also a barren field, for the indolence and ignorance of the Turks have generally neglected this branch of opulence; though from the mines in the adjacent regions of Hungary and Transylvania, and from the ancient accounts, there would be room to expect great mineral treasures. The gold mines of Philippi, about 80 miles to the east of Salonika, in the time of Philip of Macedon produced yearly about 1000 talents, 2,880,000l. sterling: and silver mines were found in Attica and other quarters*.

Mineral Waters, &c.] The Mineral waters are little known or celebrated; and the natural curiosities in the northern parts, and around mount Hæmus, remain undescribed. Among those in the south may be named mount Athos, which, as already mentioned, rises in a conical summit, about 3300 feet, grotesquely adorned with churches and monasteries. The grotto of Antiparos, one of the Cyclades to the west of Paros, has been well described by Tournefort, and recently by an ingenious female traveller[1]. The isle of Antiparos is a rock of fine marble, about 16 miles in circumference. In the southern part of this island, about a mile and a half from the sea, rises a rugged cavern with some ancient inscriptions. After proceeding about twenty paces appears a dark and low passage, whence the traveller, being provided with lights, descends by a rope, and afterwards by a ladder placed by the side of deep abysses. The path now becomes more easy, and conducts to another steep precipice, which is descended by another ladder. After much fatigue, and some danger, the traveller at length arrives in the grotto, which is supposed to be about 900 feet from the first opening[2]. Tournefort estimates the height of the grotto at about 40 fathoms. The stalactitic marble hangs from the roof, in the most elegant and picturesque forms; and on the floor are large masses of stalagmite, brownish and less pure, produced by the liquified stone dropping from above; but Tournefort, a botanist, very naturally supposes that they vegetate[3]. A great distinction between this grotto, and others of a

* From Blasius Caryophilus (Bigio Garofalo) *de Marmoribus Antiquis*, Trajecti 1743, 4to. it appears, p. 7, that the Tænarian marble of Laconia is the *verde antique*. Another kind was found in Thessaly, whence the number of pillars in the church of St. Sophia at Constantinople; but it is totally unknown in Egypt, the substance found in the valley of Cosseir being a beautiful green siliceous brecia. Ptolemy, iv. 5, mentions the rocks on the west of the Red Sea, but it is difficult to explain his *Troicus lapis*, if it be not the limestone with nummulitas common near Cairo.

In the curious collection of the Ancient Mineralogists of France, Paris, 1779, tom. i. p. 53, there is a description of the gold mines of Siderocapsa in Macedon, by Belon, 1550. This place is the ancient Chrysites, two days' journey from Thessalonica, not far from the sea, and near the village of Sicene.

[1] Lady Craven.

[2] But this must include all the windings, for Lady Craven computes the direct distance at only 300 feet, p. 247.

[3] Vol. i. 148.

similar

similar kind in England and other countries, is the purity of the material, being marble of a snowy whiteness, and the finest calcareous spar. The marble of Paros has been known and celebrated since the classical times, as the most pure that the sculptor can employ; but some prefer that of Carrara as of a finer and closer grain, and more obedient to the chisel, the Grecian having a large chrystalline grain, apt to slit off more than required.

ISLANDS BELONGING TO TURKEY IN EUROPE.

ISLANDS.] THE numerous islands in the Archipelago (the ancient Ægean sea) are by geographers considered as belonging to Europe, except a few which approach the Asiatic shore, as Mytilene, Scio, Samos, Cos, and Rhodes.

But the largest of the Turkish islands is that of Crete, being about 180 British miles in length, by 40 at its greatest breadth. A chain of considerable height, called the White Mountains from the snow, pervades a great part of its length. [4] The inhabitants are vigorous and robust, and still fond of archery. This isle abounds in cattle, sheep, swine, poultry, and game, all excellent; and the wine is balmy and luscious. The dogs of Crete are ugly, and seem to be between the wolf and the fox. The siege of Candia by the Turks, in the middle of the 17th century, is remarkable in history, as having continued for 24 years, 1646 — 1670. This island had flourished before under the Venetians.

Candia is supposed to contain 12,000 inhabitants, chiefly Turks; and the Venetian fortifications remain pretty entire. [5] The other towns of note are Rhetymo and Canea. Remains of the ancient inhabitants possess some mountains. The heat is tempered by a regular wind called *embas*, which pervades the Archipelago, blowing from the north, from eight or nine in the morning till the evening. Most of the mountains are said to be calcareous, or of limestone, while a few are granitic and argillaceous. The chief exports are oil, soap, wax, honey, cheese, raisins, or dried grapes, almonds, wall-nuts, chesnuts, cards, liquorice, and linseed.

Next in size and importance is Negropont, about 100 British miles in length, by 20 in breadth. This isle also belonged to the Venetians till a late period, and the description, with maps and plans by Coronelli, forms a curious morsel of modern topography on classical ground. The inhabitants are computed at 40 or 50,000. The town is said to contain 14,000. The strait between the isle and the main land is so narrow, that a bridge has been thrown over it. Its products are the same with those of Greece in general.

The other chief names are Lemnos, Skyro, and Andro, with Naxia, Milo and Stamparia.

Of Lemnos and the adjacent isles, an excellent map has been published by the Count de Choiseul. [6] Lemnos was long subject to the Venetians. It is said that a part subsided, when a volcanic isle arose near Santorini, and that the isle of Chryses became a bank of sand. Towards the eastern side was the volcano, the fabled forges of Vulcan; and shocks are still felt. There are two havens, one on the N., another on the S., with a smaller on the W. supposed to be the ancient town of Lemnos. The hill of Therma has a warm spring of 31°. The soil is fertile; and the inhabitants computed at 30,000.

Skyro has only about 4,000, the chief products being wine and cheese. Andro is about 80 miles in circumference, with about 10,000 inhabitants, but is mountainous and rocky. Naxia has the same population, with a little town, and about forty hamlets. The numerous hills are granitic or argillaceous; but on the slate, limestone reposes, and supplies as usual numerous sources. The products are wine, corn, barley, oil, oranges,

[4] Tournefort, i. 69, &c. [5] Olivier, ii. 325. [6] Voy. Pitt. tom. ii. pl. 13, 14.

and lemons, with peaches and other fruits, cheese, cotton. Stampalia is chiefly remarkable for its size.

Most of the isles in the Ægean sea, singularly interest the imagination, from their picturesque positions, and from classical reminiscences. Delos is desert, though fertile, and contains many ruins, the tombs of human vanity and grandeur. The ancient Sporades approach the Asiatic shore; but the Cyclades, far more memorable, belong to this portion of our plan. Santorini is a remarkable isle, celebrated for its wine, called *vino santo*, and containing about 11,000 souls, mostly of the Greek faith. It is injured by volcanic fires, and in 1707, a new isle arose from the sea, with violent explosions, which is about a mile in diameter.[7] This isle is regarded as one of the most fertile and populous, the inhabitants being mostly of the Greek church. Where the volcanic isles have arisen at long distant periods, the sea is muddy, of a greenish yellow, and fetid smell. A map of Santorini is given by Olivier.

Milo has basaltic rocks, and a little volcano, mischief in miniature. The *terra Cimolea* is from Chimolo or Argentiere. Paros, famous for its marble, has about 2000 inhabitants. The grotto of Antiparos has been described among the natural curiosities.

IONIAN ISLES.

This little republic is now under the protection of England, which sends a governor and garrison. It consists of seven isles in the Ionian sea, of which the chief are Cephalonia, Corfou, and Zante. Cephalonia has been long known for its produce of currants or Corinthian grapes, familiar to our tables. The circumference is about 170 miles: inhabitants about 60,000. The capital is Argostoli. Soil mountainous, but fertile.

Corfou is regarded as of more importance, though inferior in size. The population rivals that of the former. The capital, of the same name, may contain 10,000 souls. The port is good.

Zante presents about 30,000 people, mostly Greeks, who retain their ancient manners. Teaki is the ancient Ithaca.

The whole inhabitants of this little republic are computed at 160,000 Greeks, Italians, and Jews. The climate resembling that of the south of Italy, the products are similar in olives, vines, and figs: and in what the Italians call *agrumi*, that is oranges, lemons, citrons, and other fruits of that peculiar description.

[7] See Payne's Geographical Extracts, p. 252. 256. for an interesting detail of this singular phenomenon. A plate has been published of a similar event near the Azores.

HOLLAND
THE NORTH SEA
ZUYDER ZEE
Hoede Poort
Der Scheling
Ameland I.
den Abdt
the Watt
Vlieland
de Waard
Harlingen
Texel
Vlie Stroom
Broad Sand
Deep
Stroom
De Meer
Staveren
't Val van Urck
Het Val van Urck
Schagen
Wieringen
Wieringer Hack
Bezuiden
Dregter Land
Middel Kogg
Enchuysen
Shok land Urck
Alkmaer
Hoorn
De Schermer
Purmerent
Edam
Monnikendam
Haerlem
Sea of Haerlem
AMSTERDAM
Amsteland
Naerden
Gooiland
Kemland
Weesp
Muiden
The Pamptus
Leyden
Hague
Gouda
Delfland
Schieland
Delft
Rotterdam
Mouth of the Maes or Meuse
Briel
Isselmonde
Alblasser Waer
Gorcum
Dort
Beierland
Voorne
Goree
Over Flakkee
Schouwen
Tierikzee
The East Zealand
Tholen
Beveland
Marquisaat
Bergen op Zoom
Barony of Breda
Duchy of Bergen
Middleburg
Walcheren
Flushing
Goes
South Beveland
The Honde
West Scheld
Cadsand Ile
Dutch Flanders
Hulster Land
Shays
Ambagt
Axel
Philippina
Sas of Ghent
Meiery of Turnhout
Meiery of Hoogstraten
Ryen
Antwerp
Turnhout
Kempen Land
Boisle Duc
Heusden
Lange Straat
Heerlyck Land of Ravenstein
Kuik
Boscht
Sherpenheuvel
Helmond
Tilburg Heerl
Reck Heerl
Gemert Heerl
Oudenbosch
Leon op Zand
Rosendaal Wyk
Ryebergen
Baarle
Hoogstraten
Reusel
Bladerthem
Hees
Lierop
Asten Heerl
Someren
Heusden
Kuilenburg
Graafschap
Over Betuwe
Neder Betuwe
Tiel
Waal
Nimeguen
Hatert
Malden
Batenburg
Mook
Krauenburg
Rees
Cleves
Duchy of Cleves
Gennep
Goch
Uden
Santen
Wesel
Sonsbeck
Burik
Dorsten
Alpen
Wees
Geldres
Straten
Wachtendonk
Venlo
Meurs
Rheinberk
Buderich
Orsoy
Emmerik
Boekholt
Borken
Koesfeld
MUNSTER
Lingen
Papenburg
Meppen
Danker
Coevorden
Hardenberg
Campen
Zwol
Deventer
Eppensolder
Schott Ampt
Lochem
Zutphen
Drostamp
Quarter of Zutphen
Quarter of Arnhem
Arnhem
Doesburg
Weluwe
Wondenberg
Over Wartier
Amersfoort
UTRECHT
Leck R.
Yssel R.
Rhine R.
Emmer R.
Vecht R.
Long. E. from Greenwich.
From Senex & others.
Published March 1st 1800, by Cadell and Davies, Strand, and Longman and Rees, Paternoster Row.

SECONDARY STATES.

SUCH have been for a series of ages, and such will probably continue, in spite of temporary fluctuations, to be the primary and leading states in Europe. Prussia alone may be regarded as a new power; but it represents Poland, formerly in the first class. A secondary state may distinguish itself by commerce and marine enterprise, as Portugal or Holland; or by momentary ebullitions of warlike spirit, like Sweden; but such accidental circumstances do not change the political order, which depends upon extent of territory and population.

According to the plan of this work, the description of the secondary states shall be restricted to more confined limits.

HOLLAND WITH THE NETHERLANDS.

THESE flourishing countries, now happily united after a separation for two centuries and a half, constitute the new kingdom of the Netherlands, to which is added the title of Grand Duke of Luxemburg. The coalition being so fresh, more distinct ideas will be obtained by describing each of the grand divisions apart, as in the case of England and Scotland. For the description of the Netherlands, the reader is referred to pages 201—206 of the present volume.

HOLLAND.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

NAMES.] THE SEVEN UNITED PROVINCES were, in ancient times, chiefly possessed by the Batavi, a people highly celebrated by Tacitus: but the boundaries being modern, there is no ancient appellation which particularly denotes this country. It is commonly styled the republic of Holland, from the name of a chief province; so called from the German word *Hohl*, corresponding with the English word hollow, and implying a concave or very low country. The people are called Dutch from the German *Deutsch* or *Teutsch*: but *Deutschland* properly signifies the vast extent of Germany itself, though by the English restricted to a small portion using a dialect of the German language.

EXTENT.] These provinces extend, from the north of Groningen, to the southern boundary along Austrian Flanders and Brabant, about 150 British miles; and in

 breadth,

breadth, from what is called the North Sea to the circle of Westphalia, about 100 British miles. The number of square miles is computed at 10,000.

ORIGINAL POPULATION.] The original population appears to have been Celtic: but when the Romans conquered this country the chief inhabitants were the Batavi, the most northern people of Belgic Gaul, and incontestibly a German or Gothic progeny. The Franks passed the Rhine to the south of the Batavi; who appear to have been secure in their marshes and islands, till the Frisians, the next adjacent people in the north, in the seventh century extended themselves even down to the Scheld. In the eighth century the Frisians were subdued by the Franks under Charles Martel; but the Frisians and Franks may be regarded as mingled in the population with the ancient Batavians.[1]

PROGRESSIVE GEOGRAPHY.] The progressive geography of this region becomes curious and interesting, from the singular phenomenon of the increase of the sea. Upon inspecting the accurate maps of the ancient and middle geography of Gaul by D'Anville, it will be perceived that the Rhine divided itself into two grand branches at Burginasium or Schenk, about five miles north-west of the Colonia Trajana, now an inconsiderable hamlet called Koln near Cleves. The southern branch received the Meuse, still an inferior stream, at the town of Mosa or Meuvi; while the northern passed by Durstadt, Utrecht, and Leyden into the ocean. From the northern branch was led the canal of Drusus, which originally joined the Rhine to the Issil, a river that flowed into a considerable inland lake called Flevo, now a southern portion of the Zuyder Zee. This canal of Drusus being neglected, and left to the operations of nature, the Rhine joined the Issil with such force that their conjunct waters increased the lake of Flevo to a great extent; and instead of a river of the same name, which ran for nearly 50 Roman miles from that lake to the sea, there was opened the wide gulph which now forms the entrance. This northern and chief mouth of the Rhine was at the same time, weakened and almost lost by the division of its waters, and even the canal of Drusus was afterwards almost obliterated by the deposition of mud in a low country, in the same manner as some of the ancient mouths of the Nile have disappeared in the Delta of Egypt.

The southern branch of the Rhine, which received the Meuse, as above mentioned, was anciently called Vahalis, a name retained in the modern Waal; the ancient isle of the Batavi being included between the two branches of the Rhine, and thus extending about 100 Roman miles in length, by about 22 at the greatest breadth. The estuaries of the Rhine and the Scheld have also been opened to great inroads from the ocean: and the latter in particular, which anciently formed a mere delta, with four or five small branches, now presents the Islands of Zealand, and the most southern of those of Holland, divided by wide creeks of the sea. This remarkable irruption is supposed to have happened at the time that the Goodwin sands arose, by the diffusion and consequent shallowness of the water. These great changes may be conceived to have made a slow and gradual progress; and none of them seem so ancient as the time of Charlemagne. Some of them are so recent as the fifteenth century; for in 1421 the estuary of the Meuse, or Maese, or rather the Rhine, suddenly formed a vast lake to the south-east of Dort, overwhelming 72 large villages, with 100,000 inhabitants, who perished in the deluge.[2]

By a subsequent change the Rhine was again subdivided; and a chief branch became

[1] D'Anville Etats form. en Europe, p. 26.

[2] Cluver. 96. Guicciardini, 271. Some authors arbitrarily assign these changes to violent tempests, A. D. 860; others to 1170. Guicciardini, p. 13. A Zelandic chronicler, quoted by the same author, 346, says that the islands of Zealand were formed by violent tempests in the year 938, a date which seems to deserve the preference.

the

the Leck, which name is lost, between Dort and Rotterdam, but must now be regarded as the northern mouth of that noble river; while the Vahalis or Waal continues to be the southern. In popular acceptation, both are lost in a comparatively small stream, the Meuse, which, in fact, only runs into the southern branch at the isle of Bommel; but the precision of science rejects this ridiculous error. The less important variations in the geography may be traced with some precision in the Francic historians, and other writers of the middle ages.

Historical Epochs.] Among the chief historical epochs may be numbered,

1. The actions of the Batavi in the Roman period, from the first mention of that nation by Julius Cæsar.

2. The conquest by the Frisians; and afterwards by the Danes, and by the Franks.

3. The countries watered by the Rhine and the Meuse were for a long time divided into small earldoms; but in the year 923 Theodoric or Diedric, brother to Herman duke of Saxony, and of Wickman earl of Ghent, was appointed count of Holland by Charles the Simple king of France, and the title became hereditary. Zealand and Frisland were included in the donation. The county of Gelderland on the east was erected by the Emperor Henry IV. in 1079; and became a duchy in 1339. Utrecht was subject to its powerful prelates, who had frequent contests with the earls of Holland.

4. Florence III. who succeeded in 1187, carried on numerous wars against the Flemings and Frisians; and died at Antioch, in 1189, on an expedition to the Holy Land. He married Ada, grand-daughter of David I. king of Scotland, a country which had early commercial connections with Holland. In 1213, William I. earl of Holland formed a league with John king of England, Ferrand earl of Flanders, and the emperor Otho, against France; but William was taken prisoner at the famous battle of Bouvines.

5. William II. earl of Holland was elected by a party emperor of Germany A.D. 1247; but his claim was not crowned with success. John earl of Holland, A.D. 1296. wedded Elizabeth daughter of Edward I. of England. Frequent contests appear between the earls of Holland and those of Flanders, concerning the possession of the islands of Zealand. Philipina, daughter of William III. earl of Holland, was married to the Prince of Wales, afterwards Edward III. of England, a princess worthy of an heroic husband. The king afterwards contested the earldom of Holland with Margaret his sister-in-law. Jacquelin the heiress of Holland, in 1417, wedded John IV. duke of Brabant; but her uncle, John of Bavaria, who had resigned the bishopric of Liege in the hopes of espousing her, contested the succession. A kind of anarchy following, Jacquelin went to England, where she married, in 1423, Humphry duke of Gloucester; and this marriage being annulled by the pope, she wedded in 1432 Borselen Stadtholder of Holland; and the next year was forced to resign her states to Philip the good duke of Burgundy.

6. Holland, with other large possessions of the house of Burgundy, fell by marriage to the house of Austria.

7. Holland and some inferior provinces revolted from the tyranny of Philip II. in 1566; and in 1579 formed the famous union of Utrecht in strict alliance. The history of this interesting struggle has been depicted in glowing colours by the celebrated Grotius, who in this work sometimes rivals the acute brevity of Tacitus.

8. At the end of that century the Dutch had established colonies at the Cape of Good Hope, and in the East Indies; and settlements were afterwards gained in South America. During the seventeenth century they rivalled the English in the empire of the sea; and greatly exceeded them in commercial advantages. Their power began somewhat to decline after the obstinate naval conflicts in the time of Charles II.

Charles II. In 1672 Louis XIV. invades Holland; and Amsterdam is only saved by opening the sluices.

9. William Stadtholder of Holland ascends the throne of England 1688; and a stricter intercourse prevails between the countries, Holland becoming the grand channel of the commerce of England with the continent.

10. The Stadtholderate declared hereditary 1747. The war in 1756 opening great connexions between Holland and France, a French party began to form in the country, which opposed the Stadtholder, who was supported by the English. In 1780 a war arose between Great Britain and Holland, which closed in 1784, after exposing to Europe the decline and weakness of the United Provinces, still further displayed by the entrance of the duke of Brunswick in 1788, who may be said to have subdued them without a blow.

11. The Dutch having joined the coalition against the French, their country fell a prey to the invaders, during the hard frost of the winter 1794-5; and the Stadtholder took refuge in England in 1795. The country united to the Netherlands at the late peace under one sovereign.

ANTIQUITIES.] The ancient monuments of the United Provinces are far from being numerous or interesting. The chief remain of the Roman period is the ruined tower near Catwick, about six miles north-west from Leyden, at the ancient mouth of the Rhine. This place is commonly called Brittenburg, and is supposed by some to have been erected by Caligula. An inscription evinces that it was restored by Severus. The Dutch antiquaries have published several inscriptions, engraved stones, little images, and other curiosities found in these ruins.[3] Some inscriptions have also been discovered in the territory of Nimeguen, and a Roman mile stone in the vicinity of Derft. In the middle of Leyden, upon an artificial hill, stands a round tower, fabled to have been built by Hengist who first led the Saxons to England. Among the antiquities of the middle ages may be particularly named the church of Utrecht, with a tower of great height, commanding as it were a map of the surrounding country, and worthy of the great power of the ancient bishops of that see. But Amsterdam itself, and most of the other cities, are comparatively of recent foundation, and contain but few monuments even of the middle ages.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE Protestant religion, in the Calvinistic form, prevails through the United Provinces; and the treaty of Union 1579 bears that it shall be maintained. The states of Holland, in 1583, proposed that no other form of worship should be tolerated; but this resolution was wisely rejected: and every

[3] Junii Batavia, p. 200. Scriverius, 176.

religion

religion is permitted, on condition that it do not oppose the fundamental laws, or teach any doctrines subversive of the state; yet employments of any consequence can only be filled by Protestants.[1]

Ecclesiastic Geography.] The ecclesiastical persons are considered as divided into four ranks, professors at universities, preachers, elders, and deacons; and the government of the church is administered by consistories, classes, and synods. The consistory is the lowest court, commonly consisting of the clergy and elders of a particular town, while a class consists of deputies from several, and is commonly assembled three times in the year, a part of its duty being to visit the churches, and watch over the conduct of the clergy. The synods are either provincial or national; the first being assembled every year, while the national synod is only summoned on the most important occasions, when essential doctrines are to be discussed, and the last was that of Dort 1618. The provincial synods are:

	Classes.	*Preachers.*
1. That of Gelderland - - -	9	285
2. That of Southern Holland - - -	11	331
3. That of Northern Holland - - -	6	220
4. The congregation of Zealand - -	4	163
5. The Synod of Utrecht - - -	3	79
6. That of Frisland * - - -	6	207
7. That of Ober Yssel - - -	4	84
8. That of Groningen, the city and low countries	7	161
9. That of Drent - - - -	3	40
Total	53	1570

There are besides, numerous Walloon churches, scattered through the provinces, who hold a kind of synod twice a year, composed of deputies from their own sect. The Roman Catholics are supposed to have 350 churches, served by 400 priests, exclusive of some in the conquered territory. The chief other sects are the Lutherans, the Remonstrants, or Arminians, who have 43 teachers, Baptists, and Jews, and a few Quakers.

Government.] The United Provinces were composed of seven Republics, each retaining its own states, consisting of nobles and burgesses. The provincial states sent deputies to the States-General, each republic having only one vote, though its deputies might be numerous. But the States-General seldom exceeded 26 persons, who used to assemble in a small room at the Hague, enjoying the right of peace and war, appointing and receiving embassadors, naming the Greffier, or secretary of state, and all the staff officers.[2] The council of state directed the army and finances; and what was called the council of deputies considered the troops and finances of each province. The grand pensionary of Holland presides in the provincial states, and council of deputies of that country. The Stadtholder was originally a kind of dictator, appointed, from the necessity of the times, to conduct the emancipation of the state. The necessity having vanished, this office became of dubious authority, till William III., in 1672, procured it to be declared hereditary. As he died without children, the States seized this power till 1747, when, the French penetrating into Dutch Flanders, the rank was

[1] Busching, xiv. part ii. p. 16.

* That is Frisland proper. West Frisland is to the north of Holland on the west of the Zuyder Zee; East Frisland to the east of Groningen. See Nugent, ii. 381.

[2] Radcliffe's Travels, i. 53. Busching, xiv. p. 40, &c.

restored

restored to William IV., and again became hereditary, though in recent times frequently contested.

Holland and the Netherlands have been erected into an independent kingdom under the House of Orange, and a constitutional charter has been issued. The only opposition arose from the fanatic clergy of the Netherlands, some of whom, with a blindness worthy of the twelfth century, opposed religious toleration. It is singular, that the terrible example of France has had no influence with the Catholic clergy in general, who do not seem to perceive that charity is the most essential attribute of the gospel. In the pure morality of Jesus, he says, that "his burden is light, and his yoke easy;" but, like the Pharisees of old, that priesthood had, by vain observances, extortion, and oppression, rendered "the burden too heavy to be borne." Not content with tythes, solely founded on the voluntary gift of some spoils presented by the victorious Abraham to a hospitable king, they extorted the miserable pittance of the poor; and even sums and foundations left for the relief of poverty were sacrilegiously violated to the purposes of avarice or luxury. Is it a wonder that a special curse of Heaven followed such profanation? The populace do not read the works of philosophers: the contempt and hatred of the clergy arose from their own conduct. They should consider, that the holy founder of their religion only condemns the Pharisees, not the woman of Samaria, nor the centurion, who was not converted when Jesus declared that he found not such faith in all Israel. Their want of toleration will only lead to the inference, that they themselves are not to be tolerated.

Laws.] Justice is administered according to the local customs and statutes of each province and city, the ordinances of the States-General, and in defect of all these the Roman code. Each province has a supreme court, to which appeals lie from the lower courts of justice, except in criminal causes, in which formerly the Stadtholder might pardon, by the consent of the president and superior court of each province, save in cases of murder and other flagrant crimes.

Population.] The population of the United Provinces has been recently computed at 2,758,632*, and the extent of the territory in square miles being supposed 10,000, there will be 275 for each mile square. The population of Holland, the chief province, is calculated at 980,000.

Colonies.] The Dutch being, for a considerable time, the chief maritime power in Europe, their colonies were numerous; beside some settlements on the coast of Hindostan, and an important establishment in Ceylon, they held and still retain Batavia in the island of Java. Most of the Dutch colonies have since been restored.

Army.] The army was computed at about 36,000, but must be now increased by the accession of the Netherlands. The navy, which used to consist of forty ships of the line, has, by the events of the last war, almost totally disappeared.

Revenue.] The revenue was about 3,500,000l. sterling, but was greatly exceeded by the expenditure; so that the national debt was computed at about 130,000,000l. sterling: but 2,800,000l. were annually received as the interest of loans to foreign powers. †

Political Importance.] The new kingdom assumes considerable weight in the European scale. It presents, with the Grand Duchy of the Rhine and the Kingdom of Hanover, a formidable barrier against the encroachments of France; and it is to be hoped that the past conduct of the French will afford a perpetual lesson against their influence.

* After the dismemberment, 1,881,881 by the French accounts.

† The dilapidation of the revenue has become very apparent since the nominal monarchy.

CHAP.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] A STRANGER visiting Holland is surprized at the extreme cleanliness observable in the houses and streets, even hamlets inhabited by poor fishermen, displaying a neatness and freshness, which forms a striking contrast with the squalid appearance of the German villages. The air being always moist, and commonly cold, the Dutch dress is calculated for warmth and not for elegance. Yet the people are fond of splendid exhibitions, and remarkably submissive to their superiors [1]. The Dutch are of a phlegmatic temperament; and their courage at sea is rather obstinacy than ardour; while from the same cause their labour is rather slow perseverance, than impetuous strength like that of the English. In former times their knowledge was chiefly restricted to two channels; affairs of state, on which even the vulgar would converse with propriety; and the arts of getting money. But, as usual in the decrepitude and fall of a state, as well as in the old age of the individual, the miserable love of money at length supplanted every noble thought and generous feeling. This striking characteristic has impressed every spectator, from the days of Ray the naturalist, who visited Holland in 1663, even to the present hour. A late amiable traveller observes that "the infatuation of loving money not as a mean but as an end, is paramount in the mind of almost every Dutchman, whatever may be his other dispositions and qualities; the addiction to it is fervent, inveterate, invincible, and universal, from youth to the feeblest old age [2]."

The Dutch are commonly low in stature, and the women are taller than the men. Their sex having generally few personal advantages, they are induced to make advances, which impress foreigners as immodest and improper. The Dutch dress is little affected by fashion, and the women retain the old broad hat, while that of the men is narrow and compact; nor has the ancient female affection for gold and jewels been eradicated by the avarice of fathers and husbands. The use of salt and high-seasoned food is perhaps enforced by the humid climate, as well as that of spirituous liquors. Besides the usual games, the chief amusements were the theatres, and the tea-gardens. The opulent merchants delighted in their villas, thickly planted among the numerous canals; and the smallness of the gardens was compensated by the richness of the miniature selection, in which perhaps one tulip root might cost 50 guineas. The Dutch perseverance is also displayed in the improvement of hyacinths, and other flowers, cultivated with great attention because there was not room for the grander vegetables. In the winter skating was also a favourite amusement, and the canals were crowded with all ranks, from the senator to the milk-maid with her pail, and the peasant with his eggs. But the chief amusements in so moist a climate, were under the shelter of the domestic roof, in large and expensive collections of paintings and prints, which also became an article of commerce and avarice.

[1] Ray, 53.

[2] Mrs. Radcliffe, i. 98.

Language.] The Dutch language is a dialect of the German; and the Lord's Prayer runs in the following terms:

Onse Vader die daer zijt in de Hemelen. Uwen Naem word geheylight. U Rijcke kome. Uwen Wille gheschiede op der Aerden, gelijck in den Hemel. Onse dagelijckt Broodt gheeft ons heden. Ende vergheeft ons ouse Schulden ghelijck wy oock ouse Schuldenaren vergeven. Eude en leyt ons niet in Versoeckinge. Maer verlost ons vauden Boosen. Amen.

Literature.] The literature of the Seven United Provinces is more respectable than that of the other Netherlands. Not to mention the ancient chronicle of the church of Utrecht, written by Beka in the 13th century, and other ecclesiastical productions of the middle ages, the great Erasmus, the restorer of letters in Western Europe, was born at Rotterdam in 1467. Johannes Secundus, or Hans de Twede, one of the most elegant of modern Latin poets, was a native of the Hague, as the renowned Grotius was of Delft. Boerhaave, the celebrated physician, was born at Voorhoot near Leyden. Dort produced Paul Merula, a distinguished antiquary, who at the beginning of the 17th century first discriminated the real origins of European nations. Adrian Junius, or Yung, who explored the antiquities of his native country, was of Hoorn on the Zuyder Zee. Among other eminent names may be mentioned Meursius of Lausden, Dousa of Leyden, Heinsius of Ghent, and the younger Vossius, for the father was of Heidelberg. Hoogeveen of Leyden died in 1794, after having acquired the reputation of being the first Greek scholar in Europe. This list might be easily encreased; but it shall suffice further to observe that the native literature has not been entirely neglected, since the time of Catz the poet, a native of Zealand, who flourished in the middle of the 17th century; and that several works of utility and amusement have been published in the Dutch language, which ought to share with the German the attention of lovers of literature.

Education.—Universities.] The mode of education pursued in these provinces seems to have been greatly inferior to that used in Scotland, a country enjoying an ecclesiastic government somewhat similar. The Dutch youths being chiefly allotted to a seafaring life, there was not indeed that opportunity for numerous parochial schools, and consequent diffusion of common knowledge, which took place in Scotland. The most large and celebrated Latin Schools were at Rotterdam, Breda, Middleburg, Groningen, &c. The universities are five; Leyden, Utrecht, Harderwyck, Franecker, and Groningen; with two inferior colleges at Amsterdam and Deventer. There is an academy of sciences at Haarlem.

Cities and Towns.—Amsterdam.] Amsterdam, the chief city of Holland, upon the small river Amstel, is first mentioned in the 13th century; but in the 14th was reckoned among the commercial towns of Europe. About the middle of the 17th century, during the highest prosperity of the republic, it was enlarged by about one half. The haven is not distinguished by natural advantages, but has been improved and secured by art: and the wide forest of masts impressed every traveller with amazement. The population is computed at about 212,000. The streets are generally narrow, and the canals feculent. The houses have the common air of neatness peculiar to those of the Dutch. The chief edifices are the state house, founded on piles at an immense expence; the exchanges and the post office; but some streets along the chief canal, display houses of uniform grandeur. Some agreeable walks occur in the interior of the city; but the environs are chiefly visited by water; yet to the south there is an agreeable road to Ouderkirk through pleasant gardens and groves[3].

Leyden.] Leyden is esteemed the next city in population, containing about 50,000 souls. It is the Lugdunum Batavorum of antiquity, and is distinguished by its uni-

[3] Radcliffe, i. 108.

versity.

versity. Here the ancient Rhine almost expires in a number of small channels, which are passed by so many bridges, that the number has been computed at more than one hundred. The meadows and gardens around Leyden are remarkably productive, and there is a daily intercourse, by canals, with the other chief cities and provinces. The fair is still much frequented; but the university has declined under some commercial regulations, for the Dutch always wish to oblige strangers to leave as much money behind them as possible[4].

ROTTERDAM.] Next in population is Rotterdam, of about 48,000 people. There is a noble quay, with houses as handsome as any in the squares of London; and the great length of the streets is characteristic of Dutch cities, and even towns; yet they are generally narrow, and the foot pavement is only distinguished by a clean line of bricks[5]. In the market place stands the well known statue of Erasmus. The canals, terraces, and draw-bridges are engaging objects; but there is little of real elegance, and the Dutch idea of beauty is what we style prettiness. Yet where this prettiness leads to extreme neatness, it is preferable to squalid grace.

HAARLEM.] Haarlem is computed to contain 40,000 souls; and like Leyden, is fortified by old brick walls, the modern plan of earthen barriers, in which the cannon balls sink innoxious, being little known till towards the 17th century. The great church is esteemed the largest in the province of Holland; but the celebrated organ is more remarkable for power than sweetness. The house of Lawrence Coster, whom the Dutch fondly assert to have been the inventor of the grand art of printing, stands near the church; but impartial enquirers have decided the question in favour of Mentz.

HAGUE.] The Hague is only esteemed a village, though the inhabitants be computed at 36,000. The court, or palace, contains several chambers allotted to the different branches of government, besides the apartments of the Stadtholder. The states general met in a room which contained 26 chairs, for the usual number of the members[6]. The cabinet of natural history has been carried to France, and probably the most curious books and pictures. It is asserted that the Hague contains more magnificent houses, than occur in the like space in any city of northern Europe. On the north of the town is a noble grove, with alley of oak and beech, leading to the Maison du Bois, a palace of the Stadtholder; but the pleasantest road is that to Schevening, a village on the shore two miles to the north-west through four rows of lofty elms. The Hague is distinguished by its pleasant situation and tranquil grandeur.

MAESTRICHT.] Middleburg in Zealand is supposed to contain 30,000 inhabitants; and it has a large town house, decorated with the statues of the ancient earls and countesses of Holland. It was not only the seat of the provincial states, but also of the council of Flanders, presiding over part of that country acquired by the Dutch. Utrecht, Delft, Dort, and Groningen, are supposed each to contain about 20,000 inhabitants: and among the inferior cities may be named Maestricht, the most southern of the Dutch possessions, situated on the river Maese, or Meuse, 18 British miles north-west of Aken, or Aix la Chapelle, and ceded to the Dutch, after repeated contests, by the peace of Nimeguen 1678: in the vicinity are vast stone quarries supported by numerous pillars, which might shelter thousands from the horrors of war.

DYKES.] The dykes form a peculiar feature of the country, which must not be omitted*.

"The whole country being very low, is, except a few islands in the North Sea, surrounded for the greatest part by artificial dykes. Only from *Kykduin*, near the Helder, to the Hook of Holland, there are downs, but even these will shortly want assistance

[4] Radcliffe, i. 89. [5] Ib. i. 16. [6] Ib. i. 49.

* This article was communicated by Dr. Wernink.

in

in some parts, because a great quantity of the land has already been washed away, chiefly near the village of *Scheveningen*, the church of which stands now close to the sea, and formerly it stood at the beginning of the village.—The other parts of the country, especially Zealand, require annually an immense sum of money to keep the dykes in repair. The most famous dyke is that of West Capelle, which is 70 feet broad, and keeps constantly a number of men at work. The storms from the north-west are very injurious, and sometimes put the whole province of Zealand in immediate danger.

" In the interior parts of Holland and Gelderland there is no less danger in this respect, but only at the time when there is a great deal of ice in the rivers. If the ice happens to get loose in Germany sooner than in Holland, near the sea where these rivers empty themselves, a stoppage of the water is occasioned, which is very dangerous on account of the immense quantity of water coming from Swisserland and other parts of Germany, being increased by the rain and snow, and not having been able during the winter to pass through the rivers to the North Sea. If the ice stops the water and prevents it from running forward, cannons are placed on the dykes to fire through the ice, as soon as they can make an opening in it; by these means the force of the water breaks it entirely. But this is very seldom the case, for the loose ice sticks under and above that which is still firm, and hereby high mountains of ice are sometimes occasioned; the water in the mean while coming from Germany, increases against the ice, and soon it runs over the dykes, which are heightened as fast as possible; all the peasantry and inhabitants of the towns are obliged to assist, using strong basket work, a quantity of which is always at hand and ready. Behind braided twigs they bring as much earth as possibly can be carried to the spot. As long as they can prevent the water from running over the dykes the country is safe: but, as soon as in one part the water grows higher than the dyke, and overruns it, it takes so much earth with it, that immediately the dyke is cut through, and the country inundated. If such a calamity happens in the night, a great many lives, as well of men as beasts, are lost; houses are washed away, and trees overthrown by the power of the water and ice, that is forced through the opening of the dyke.

" It is not only necessary, that the Hollanders guard against the sea and the rivers, but they are also obliged to guard against lakes and sheets of water in the interior of the country, occasioned by the making of peat, or turf, being the fuel which is used in Holland. To make it well, it must be dug up from the bottom, mixed with water, and dried afterwards. The holes are of course immediately filled with water; and in in some parts they dig as deep as twelve and more feet. The part of the land, which is thus taken out, and filled with water, must be surrounded by a dyke to prevent it from flowing over the neighbouring fields; which sometimes have been dug out and drained again, and which are sometimes 20 feet below the surface of the water, which stands against the surrounding dykes. As in former days the government did not make proper regulations, but every inhabitant could do with his own ground what he liked, an immense deal of earth has been taken from the ground, and its place is now filled with water, from which the present large lakes and sheets of water have risen, and which in stormy weather are very dangerous, though the dykes surrounding them are in good repair.

" As the Dutch therefore are forced to take proper care of the dykes, they have tried every means for that purpose: they have a college or board of gentlemen; and inferior colleges all over the country, which are obliged to communicate to the college of the high board, in what condition the dykes are, and what is necessary to be done towards them. In some parts, especially near the Helder, they sunk ships ballasted with sand and stones, to break the force of the water; in some parts they have very

thick sail cloth stuck against the dykes under the surface of the water; and in some parts they have thick posts forced into the ground and cross beams against them."

INLAND NAVIGATION.] To enumerate the canals of the United Provinces would be infinite, for they equal the roads in other countries; and the advantage must be the more perceived during the interruption of maritime commerce, by the increase of the inland trade with Germany, the southern Netherlands, and France.

MANUFACTURES AND COMMERCE.] The chief manufactures of Holland are linens, many of which however are made in Silesia, pottery, and painted tiles, especially at Delft; leather, wax, snuff, sugar, starch, paper, besides some of woollen, cotton, and silk. But the most precious branch of commerce consisted in spices and drugs, brought from the settlements in the East Indies; and the Dutch East India company was, for a considerable time, the greatest mercantile firm in Europe. The fishery in the Northern seas, and even on their own and the English coasts, was also an object of great commercial importance. Latterly perhaps the chief advantage was derived from Holland being the grand deposit of commerce between Great Britain and the continent, particularly Germany and France. The inland trade with Germany, by the canals and the Rhine, is almost the only branch which has escaped the ravages of war, and may even now be regarded as considerable. Of this the most remarkable feature consisted in the vast floats of timber, which arrived at Dort from Andernach, and other places on the Rhine, whose copious stream received the trees of the German forests. The length of these rafts is from 700 to 1000 feet, the breadth from 50 to 90; and 500 labourers direct the floating island, which is crowded with a village of timber-huts for their reception. The navigation is conducted with the strictest regularity; and on their arrival at Dort the sale of one raft occupies several months, and frequently produces more than 30,000l. sterling[7]. The other branches of inland traffic are numerous: and the Rhine may be said to supply Holland with insular advantages, secure from the destructive inroads of maritime war.

[7] Radcliffe, ii. 114.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes. Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] HUMIDITY and cold are the chief characteristics of the climate of the United Provinces. The general face of the country is that of a large marsh which has been drained; the canals, and even the sea, looking pale and discoloured by mud; but the numerous and important cities and towns excite admiration, and the most dignified ideas of the wonderful powers of industry, which seems to have selected a chief seat amidst the greatest natural disadvantages. And even among these marshes the eye is relieved by the groves, gardens, and meadows: and to the east of Utrecht the woods and hills gently swell towards Germany. Yet the east even of Dutch Brabant is disfigured by the large morass of Peal, extending about 30 British miles in length: Over-Yssel, so called from its western boundary of the Issel, which received the canal led by Drusus from the Rhine, is almost wholly composed of enormous marshes and heaths; and the morass of Bourtang rivals that of Peal in extent. The northern provinces or Frisland and Groningen, (parts of the ancient Frisia which included also the principality of East Frisland now belonging to Prussia,) present towards the south and south-east extensive heaths; while the parts towards the sea rival the morasses of Holland. Thus the whole country may be said to display an intimate combination of land and water; and the few elevations commonly consist of barren sand*.

SOIL AND AGRICULTURE.] The agriculture of such provinces cannot be expected to be considerable, the land being mostly under pasturage, except a few crops of madder and tobacco, which are cultivated with great predilection. In the province of Gelderland, and the barony of Breda, there were waste grounds of some extent, overrun with broom and heath, the soil generally a black sand, which seem to have been neglected as approaching to the frontier. The pasturages in the north of Holland, especially those of Bemster, and in Frisland, supplied such quantities of excellent butter, as to become a staple article of commerce. The cows seem to have been originally from Holstein, and the utmost attention was paid to warmth and cleanliness, so that even in summer the animals appeared in the meadows cloathed with ludicrous care[1]. It was probably known from experience that the climate was too moist for wheat, and too cold for rice; and pasturage being preferred to inferior crops, the small portion of fertile land was divided into pasturage and gardens.

RIVERS.] The chief rivers of the United Provinces are the Rhine, and the Meuse. The latter, as already mentioned, has in the vulgar mouth usurped the honours due to the majesty of the Alpine river. But in the precision of science the estuaries of the

* It is somewhat remarkable that the Zuyder Ze should be frequently frozen, Nugent, ii. 385; probably owing to the shallowness of its waters.

[1] This is merely a precaution against flies which infest the animals, and thus diminish their milk, as the author learned on the spot.

Maas, or Meuse, should be styled those of the Rhine, though the people accustomed to the ancient and more northern egress of this grand river have continued to prefer tradition to fact. The Leck and the Wahal must both be regarded as estuaries of the Rhine, though, after their junction, they be commonly styled the Meuse, while in just and precise geography it would be said that the Meuse now falls into the Rhine on the east side of the isle of Bommel. The principal river falling into the Zuyder Ze is the Issel, which rises not far to the south-west of Munster, and after receiving the canal of Drusus near Duisberg becomes a considerable stream. On the north of this is the small estuary of Wecht, which rises to the north of Munster. The rivers of Frisland and Groningen are so diminutive that they are mostly lost in the numerous canals before they join the sea.

LAKES.] The lakes are of small extent, if we except what is called the sea of Haarlem, on the north of which is the Y *, a broad piece of water passing by Amsterdam, rather wearing the semblance of a creek of the sea, than of a river: and even the Meer of Haarlem can hardly be regarded as a lake of fresh water. There are other small lakes in the north of Holland, and in Frisland and Groningen; not to mention some amidst the marshes of Over Yssel.

PROGRESSIVE GEOGRAPHY.] Of mountains there is not the most distant semblance; and even the few hills towards the east may more properly be denominated little elevated tracts of sand.

BOTANY.] When it is considered that the Batavian territory is destitute of woodlands, of mountains, and of limestone districts, it will easily be perceived in what respects its flora is inferior to that of Britain: we should search in vain among the swamps, the level meadows, or the sandy heaths of Holland for the numerous species of orchideæ, and of papilionaceous plants that inhabit the beech-woods of Sussex, and Kent, or the open chalk downs of the southern and midland counties, and through the bleak heaths of Gelder, and Overyssel may furnish a few of our mountainous plants, such as the arbutus uva ursi, and vaccinium vitis idæa; yet those that dwell by the rushing torrents of Wales and Scotland, that fix themselves to the rocky bottom of our pellucid lakes, or flourish in the cloudy solitude of Snowden, of Skiddaw, or of Ben Nevis are wholly wanting in the list of indigenous Batavian vegetables. The only plants possessed by Holland which are not found in the British islands are Isnardia palustris, trapa natans, calla palustris, valisneria spiralis, all aquatic plants and natives of the Rhine, and other waters in the province of Holland; and veronica peregrina, globularia vulgaris, campanula persicifolia, ornithogalum minimum, and oenothera biennis, *evening primrose*, growing on the frontiers of Brabant and Westphalia †.

ZOOLOGY.] In the zoology of the United Provinces there is nothing peculiar, or worthy of remark; the horses are chiefly from England and Flanders, the oxen from Holstein. The stork is here frequent, though unknown in England. The shores abound with excellent fish, particularly turbot and soals; but the herrings, a favourite food, are derived from the northern ocean, and are chiefly brought to Flardingen, or Vlaerdingen, a port on the west of Rotterdam, so noted in ancient times that the earls of Holland are first mentioned by the style of earls of Flardingen.

MINERALOGY, &c.] Minerals are unknown, if we except the slight incisions for peat; and the land being mostly alluvial, it is scarcely possible that any metals, or even coal, should be found. In digging a well near Amsterdam sea-sand was discovered at the depth of more than 100 feet, a proof that in primitive ages the land had encroached upon the sea, which afterwards resumed a part of its rights. On the other hand, in

* By some pronounced *Ey*, by others *Wye*; syllables common in the English names of rivers.
† De Gorter, Flora Belgica.

digging the marshes trees have been found at a considerable depth, often with their heads towards the east, as if they had yielded to the fury of the western winds. The umber or ligneous earth, sometimes used by the Dutch to adulterate their snuff, is not a native product, but is brought from the vicinity of Cologne, where it occurs in vast beds, and is sometimes even used for firing. The Dutch not only procure peat from the morasses, but also from the bottoms of the rivers by dragging up the mud, which is exposed to dry on the shore, then cut into small pieces, and again dried for use. No mineral waters are here known: and there are few uncommon appearances of nature, though the whole country may be deemed an artificial curiosity, from the number of canals, and from the vast dykes erected to exclude the sea. These are often protected by a covering of rushes, strongly fastened with wood; yet sometimes dreadful inundations have taken place, an evil which long experience seems latterly to have taught them to prevent.

1, 339

Arrowsmith direxit.

From the Danish Map Published at Copenhagen.

Published March 1st 1802, by Cadell and Davies, Strand; and Longman and Rees, Paternoster Row.

DENMARK.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Name. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

NAMES.] THE name of Denmark, implying the marches, boundaries, or territories, of the Danes, is derived from the inhabitants, who are said to have been so denominated from one of their first leaders called Dan. Such etymologies are always uncertain; and even when clear the knowledge acquired is of no importance. The people are mentioned by the name of Danes in the sixth century, when we first begin to gain a faint idea of Scandinavia from the history of Jornandes. Norway, anciently Norrik, or the Northern kingdom, affords a palpable and precise derivation.

EXTENT.] These kingdoms, which in former times have, by repeated emigrations, changed the destinies of a great part of Europe, and continue deeply to interest the student of history, constitute a singular expansion of territory. For from the river Elbe, in the south, to the northern extremity of Danish Lapland, and the wild environs of the river Tana, may be computed, after excluding the entrance of the Baltic, an extent of not less than 1400 British miles in length, by a medial breadth of only 150. Of this great length Denmark occupies about 260 miles, while the remainder belongs to Norway. This extent of coast might be supposed to constitute a formidable naval power; but unfortunately the havens are neither numerous nor important, and are better adapted to the fleets of small vessels which formerly struck Europe with dismay, than to the pomp and magnitude of modern navigation. To the south the Danish province of Holstein borders on the wide territories of Germany; on the east, west, and north, Denmark is surrounded by the sea. The eastern limits of Norway are chiefly indicated by a long chain of mountains, passing between that country and Sweden.

ORIGINAL POPULATION.] The original population of Denmark appears to have consisted of Cimbri, or Northern Celts, the ancestors of our Welsh; and who in particular held the Cimbric Chersonese, or modern Jutland and Sleswick. On the progress of the Goths from the north and east the Cimbri were expelled, and being joined by part of the Teutones, or more southern Germans, they were in quest of other possessions, when they were defeated by Marius. Yet the Chersonese continued to retain their name; and Tacitus mentions that in his time there existed a small state of the Cimbri, probably near the mouth of the Elbe, while the remainder of the Chersonese

sonese was possessed by seven Gothic tribes, among which he names the Angli, who afterwards gave appellation to England, and who appear to have resided in the eastern part of Sleswick, where there is still the province of Anglen. The original possessors of Norway, which, with Sweden, constitutes the ancient Scandinavia, appear to have been the Fins and the Laps, who were driven to the northern extremities by the Gothic invasion, allegorically said to have been conducted by Odin the God of War. The population has since continued pure and unmixed by foreign conquests; and the Norwegians still retain the muscular frame, blooming countenance, and yellow hair of the Normans, so well known in France, Italy, and England.

Progressive Geography.] The progressive geography of Denmark may be traced with some precision from the first mention of the Cimbric Chersonese by astonished Rome. Pliny supplies some omissions in the description of Tacitus, by mentioning the Sinus Codanus, or Baltic, and some bays and islands in this vicinity. Tacitus describes the *Suiones*, ancestors of the Danes, not of the Swedes, as imagined by careless geographers, as consisting of states situated in the sea, that is in the islands of Zeeland, and others which still form the seat of Danish power[r]. He adds that they had fleets, their ships being of a singular form, capable of presenting either end as a prow; that they had acquired wealth, and were ruled by a monarch. The whole circumstances, as well as the course of the narration, might easily be shown to apply to the Danes, and not to the Swedes, who are the *Sitones* of that great writer. The progressive geography of Denmark may afterwards be illustrated from various passages, especially from Jornandes, and the Francic historians, till Adam of Bremen, in the 11th century, gave a minute description of the country, and their own historian Saxo Grammaticus, composed his classical work about the year 1180.

The geography of Norway, as may be expected, is more obscure; nor is there reason to believe that any part, except its most southern extremity, had been seen by the Roman mariners. It seems therefore a vain conception, merely arising from a similarity of names, to suppose that the Nerigon of Pliny is Norway; and to add to the absurdity that the city of Bergen, which was only built about the year 1070, is the Bergos of that author! The passage belongs to his description of Britain *; and it would be more rational to enquire for these isles, (for he especially mentions Bergos as a separate isle,) among the Orkneys; or perhaps off the coast of Jutland, where it is well known that isles have been lessened and devoured by the fury of the western waves. In his attempt to illustrate this subject, D'Anville has sunk into the grossest absurdities; and his arguments are not only puerile, but he even corrupts the text of Pliny. Suffice it to observe that he extends beyond all rational bounds the ancient knowledge of Northern Europe; and supposes that the promontory of Rubeas is the furthest extremity of Danish Lapland, instead of a cape in the north of Germany stretching into the Baltic! It is painful to observe so able a geographer following in this instance the dreams of Cluverius and Cellarius, while he justly restricts the ancient knowledge of Asia and Africa. Few materials afterwards arise for the progressive geography of Norway, till the time of Jornandes; whose account is succeeded by the navigation of Ohter reported to the great Alfred, and the description by Adam of Bremen †.

The chief historical epochs of these conjunct kingdoms must be separately considered, till their union in the 14th century.

Historical Epochs.] 1. The most ancient population of the continental part of Denmark by the Cimbri, who probably possessed the adjacent large isles, the ancient

[r] Germ. c. 44.

* Lib. iv. c. 16. *Britannia et Hybernia.* "Sunt qui et alias prodant, Scandiam, Dumnam, Bergos: maximamque omnium Nerigon, ex qua in Thulen navigetur."

† For the minute and recent divisions of the Danish dominions, the able work of Catteau may be consulted, *Tableau des Etats Danois*, Paris, 1802, 3 vols. 8vo.

and chosen seat of the Danish monarchy; but of this last position there is no evidence.

2. The conquest by the Goths, who appear to have proceeded from Scandinavia into the isles, and Jutland, as the dialect differs greatly from the German Gothic, while it is a sister of the Swedish and Norwegian.

3. The Roman and Francic accounts of Denmark, from the time of Pliny and Tacitus to that of Charlemagne.

4. The fabulous and traditional history of Denmark, which extends from about the year of Christ 500 to the reign of Heriold mentioned by the Francic historians in the time of Charlemagne.

5. The conquest of Denmark by Olaf II. king of Sweden, about the year 900. The Swedes appear to have been expelled by the Norwegians, for we afterwards find Hardegon of Norway king of Denmark. The Danish antiquaries have not shown much judgment in extricating the ancient history of their country, in which they should have preferred the Francic historians to the Icelandic Sagas. Some difficulties indeed arise because Jutland and the isles were occasionally divided into two monarchies; but if the Danish writers showed as much acuteness as industry the embarrassments might disappear.

6. The more certain history commences with Gurm, or Gormo, A. D. 920, but there seems no evidence whether he sprung from a native race, or from the Swedish, or Norwegian. Gormo is succeeded by his son Harald Blaatand 945, who is followed by his son Swein 985, well known by his invasion of England, where he in some measure usurped the sovereignty, and died A. D. 1014.

7. The reign of Canute the great, king of Denmark, England, and Norway. The conversion of Denmark to Christianity had commenced in the beginning of the ninth century, when St. Amsgar began to diffuse the light of religion in Jutland; and towards the middle of that century there were churches at Sleswick, and even at Arhus: but Christianity was far from being universal in Denmark till the reign of Canute the great, when it was followed by its universal consequences, the cessation of piracy and rapine, and the diffusion of industry and civilization. In the year 1086 Denmark displayed to Christendom a regal saint, and martyr, in Canute IV.

8. The wars of Denmark with the Wends, or Slavonic inhabitants of the southern shores of the Baltic, who by the ignorant historians of the middle ages are styled Vandals, as the Gutæ of Ptolemy are by them styled Goths, whence the Swedish Gothland instead of Guthland.

9. The reign of Waldemar, surnamed the great, A. D. 1157, who defeats the Wends in many battles, and subdues the isle of Rugen. Hence followed slowly the conversion of Pomerania, and of the countries on the east. Waldemar is regarded as the parent of the Danish laws. In 1223 the second Waldemar, with a fleet of 1000 ships subdued a part of Livonia and Estonia; on which occasion is said to have been first displayed the noted banner of Dannebrog, being red with a white cross.

10. The marriage of Hakon VI., king of Norway, with Margaret daughter of Waldemar III. king of Demark, A. D. 1363, produced the memorable union of the three crowns of the north. On the death of her young son, Margaret ascended the throne of Denmark and Norway in 1387, and that of Sweden in 1389. She died in 1412: and Sweden soon after prepared to throw off the yoke. Her husband, Eric of Pomerania, reigned about 26 years after her death; and was followed by Christopher of Bavaria, who removed the royal residence from Roskild to Copenhagen, the source of the elevation of the latter city.

11. The accession of the house of Oldenburg, in the person of Christiern I., A. D. 1448. The repeated revolts of Sweden, were suppressed by his successor John, who was crowned at Stockholm in 1497, and the next year concluded an alliance with

Louis

Louis XII. of France, and James IV. of Scotland. John had repeated wars with the Hanseatic league, which supported the Swedes against his authority.

12. The tyrannical and unhappy reign of Christiern II., when Sweden was emancipated by the efforts of Gustaf Wase.

13. The abolition of the Roman Catholic religion by Christiern III., 1537; but the Lutheran had been already introduced in 1526.

14. The reign of Christiern IV., who carries on unsuccessful wars against Austria, and Sweden; the latter being continued by his successor Frederic III., who was constrained to sign a treaty in March 1660*, by which he abandoned to Sweden the valuable province of Scone, and other parts in the south of Scandinavia, which had long remained in the possession of the Danes, together with the fertile island of Rugen.

15. The memorable revolution of the 23d October 1660, by which the crown was declared absolute and hereditary†. The subsequent events have been little memorable.

Of the Norwegian history the chief epochs may be considered in the following order:

1. The original population by the Fins and Laplanders.

2. The conquest by the Goths.

3. Norway was divided into 20, or more, petty monarchies, till the ninth century, being as may be conceived in a more savage state than Denmark, and Sweden. From that singular and interesting work, the history by Snorro, which is chiefly that of Norway, it would appear that the Norwegian monarchs sprung from the ancient royal family of Sweden. The sovereignty originally founded in the south-east part of Norway, around the modern city of Christiana, was extended by degrees, and Harald Harfagre about A. D. 910 became master of all Norway. During the contest many discontented princes and nobles left the kingdom; and among other Ganga Hrolf, or Rollo the walker, so called because no horse could support his weight, proceeded to France; where, in the year 912, the province afterwards styled Normandy was surrendered to him and his warlike followers. The romantic successes of the Normans in England, Italy, and Greece, are delineated by the masterly hand of Gibbon.

4. The reign of Olaf I., when Norway and Iceland were converted to Christianity. Greenland had been discovered A. D. 982, by Eric the red, and his attendants, from Iceland; which island was itself peopled from Norway 874—880. In this reign of Olaf I., Vinland, or Wineland, a more southern part of North America, was discovered by Biarn, and by Leif, son of Eric the red, A. D. 1003. The little colony, settled in Vinland about 1006, perished from intestine divisions. The country was so called from some wild grapes or berries; and is supposed to have been on the coast of Labrador, or more probably the island of Newfoundland. Currants, or small grapes, are indeed found as far north as the English settlement on Hudson's bay; and the distance from the Norwegian settlement in Greenland to Newfoundland, might easily have been traced by a vessel running before the wind, as was the case. Yet Greenland alone would assign to the Norwegians the first discovery of America‡.

* Jemptland and Herndal, regarded as Norwegian districts, had been yielded to Sweden in 1645. Pontoppidan, and what is still stranger Mr. Coxe, have in their maps extended Herndal or Haridal (Busching i. 607.) across to the sea, while it is a small province to the south of Jemptland, on the east of the Scandinavian Alps. Of this strange mistake it appears that Homann's map is the sole source; and his maps are indeed notorious for gross inaccuracy: nor was it in 1660, as the map asserts, that Herndal was yielded to Sweden. Consult the impartial testimony of the general map of Sweden by Hermelin, or in his Atlas the particular map of the province of Herjeadalen. The detection of this great error was necessary, as Mr. Coxe's Travels are deservedly in many hands.

† Catteau may be consulted for some curious details concerning this revolution.

‡ It is singular enough that while the Welsh antiquaries deafen us with the imaginary discovery of America by Madoc, A. D. 1170, the Norwegians have been contented with a simple unpretending narration of the facts. Mr. Pennant has ironically observed that his countrymen suppose that *penguin* (white head) derived its name from the Welsh settlers, while that bird has a *black* head.

5. The remarkable reign of Olaf II., the saint, 1014—1030. His second son, Harald III., aspired to the throne of England, and was slain in a battle against Harold king of England, on the 25th of September, 1066. This memorable conflict, which, by weakening the English force, led to the Norman conquest, has been hastily described by our historians, who have confounded this king, surnamed *Hardrad*, with Harald *Harfagre* who reigned a century and a half before. The son and successor of this king founded Biorgen, or Bergen, in 1069.

6. Magnus II., in the year 1098, subdued the Orkneys and Hebudes, which had been subject to the Normans from about 850; but the earls had refused homage to the Norwegian kings.

7. The Hebudes, or Western islands, were surrendered to Scotland, A. D. 1266, by Magnus V.: but the Orkneys continued to be regarded as subject to Norway till the year 1468. Iceland, which had existed as an independent republic, about this time became subject to Norway[2]. Magnus V. first instituted hereditary dignities; and imprudently excluded the deputies of the people from the national assembly.

8. The final union of Norway with Denmark A. D. 1387; since which period the events must be sought in the history of the latter kingdom.

ANTIQUITIES.] The ancient monuments of Denmark and Norway are chiefly what are called Runic, though it be not clear at what period the use of the Runic characters extended so far to the north. Circles of upright stones are common in all the Danish dominions, in Holstein, Sleswic, Jutland, the isles, Norway, and Iceland; in which latter country their origin is perfectly ascertained, as some were erected even in recent times of the Icelandic republic, being called Domhring, or Circles of Judgement. Some also appear to have been cemeteries of superior families. Monuments also occur of two upright stones, with one across; and of the other forms imagined by our antiquaries to be Druidic. Since the conversion of these countries to Christianity, in the 11th century, many churches were erected; among which are those of Bergen and Drontheim, both built of stone in that century. The residences of the chiefs appear to have been generally constructed of wood; for there are few ancient castles to be found in Denmark or Norway. In Iceland there still exists a bath, built by Snorro, the famous historian, in the 13th century; but the edifices were there also of timber, so that no remains can exist.

[2] Torf. Hist. Nor. iv. 334.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenue. — Political Importance and Relations.

RELIGION, &c.] THE religion of Denmark and Norway is the Lutheran. There is no archbishop; but the bishoprics are 12, six in Denmark, four in Norway, and two in Iceland. The chief see is that of Zeeland, which yields about 1000l. a year. The others are from 400l. to 600l.; the bishoprics of Skalholt and Holun in Iceland are only valued each at 150l., but living is far cheaper in that island. The other clerical orders are provosts, or archdeacons, parish priests, and chaplains. The parochial clergy are maintained by their glebes, tythes, and surplice fees; but in Jutland some of the livings do not exceed 20l. a year *. The number of curates and vicars is 2,462 †.

GOVERNMENT.] Since the revolution of 1660, the Danish government has been an absolute monarchy. That revolution was produced by the obstinacy of the nobility, and consequent enmity of the clergy and burgesses, who perceived no other means of humbling their adversaries. As the northern nations are seldom deficient in good sense, we may conceive that theoretic reasonings on the subject are idle; and that as the nobility would make no concessions whatever, there remained only the alternative of an absolute monarchy, or a civil war. At the same time, as the intentions of the clergy and burgesses were perfectly understood, and their original aim was to acquire a parity of power, it may well be regarded as extremely ungenerous in the monarchs, that they did not restore the national council, so constituted and balanced. It is indeed not a little remarkable that, since that period, the genius of Denmark has ever yielded to that of Sweden, a proof that an absolute sovereign in fact weakens his own power: for liberty is the parent of industry and exertion, and a free people can supply strength and resources to the throne, infinitely surpassing those of despotism.

LAWS.] The Danish government has however been generally conducted with mildness and moderation; and their regal acts pass through many councils, who carefully observe the legal forms. The laws are chiefly comprized in the code of Christiern V., who reigned in the end of the 17th century. This code consists of six books: 1. on judgment and judges: 2. religion and religious orders: 3. civil and economical affairs: 4. navigation and maritime laws: 5. property: 6. crimes: forming only a small volume like the laws of Sweden, Russia, and Prussia; while in the south of Europe a life might be consumed in perusing the laws of some of the states. The peasants who had unaccountably sunk into slavery were all declared free in the year 1800 ‡.

* Riesbek, iii. 101, gives a singular picture of the Danish parochial clergy, who are as much venerated by the people as they were in Scotland a century ago; but are orators of despotism, being held in strict bonds by the court.

† Catteau, iii. 32.

‡ By a great singularity the solemnity of capital punishments, and the singing of psalms, led some fanatics to commit crimes that they might die such a christian death. Catt. i. 358.

POPU-

POPULATION.] The population of the Danish dominions is computed at 2,500,000, though there seem little room to infer that it yields to that of Sweden. If we suppose the square contents to be about 180,000 miles, there will only be 12 inhabitants to the square mile. Norway is not supposed to contain more than 700,000 souls, nor Iceland above 50,000, the former only yielding six, the latter one to the square mile.

COLONIES.] Denmark possessed some small colonies, as Tranquebar on the coast of Coromandel, Christianburg on the coast of Guinea, a small part of Greenland in America; with three islands in the West Indies, St. Jan, St. Thomas, and St. Croix, of which the latter was purchased from France in 1733 *.

ARMY.] The army of this kingdom is computed at 70,000 men, of which Denmark supplies about 40,000, and Norway the remainder. The navy consisted of 33 ships of the line, manned by about 11,000 seamen, and 5000 marines: but has since been greatly reduced by the English unprecedented assault.

REVENUE.] The annual revenue is computed at about 1,500,000 sterling, being superior to that of Sweden. Denmark contributes 543,554l.: Norway 290,000l.: Sleswic and Holstein 300,000l: the West Indian islands 262,000l.: the toll levied upon ships passing the Sound 122,554l.: Altona 3,150l. The expences of the state amount annually to about 1,050,000l; and it is burthened with a debt of 2,600,000l. [1]

POLITICAL IMPORTANCE AND RELATIONS.] Denmark and Norway have long ceased to be objects of terror to the southern powers, and centuries have elapsed since any of the monarchs have been distinguished in war, while the Swedes on the contrary have maintained their martial spirit. Christiern IV., whose long reign extended from 1588 to 1648, was the last of the warlike monarchs: and since that period the Danes have been vanquished in every contest, either in Sweden or Germany. The resources of the monarchy have also been weakened by its despotism: and Denmark is little regarded among the European powers. A timid policy has long united her in alliance with Russia, as a mean of security against Sweden; but more wisdom would appear in a firm alliance with Sweden † and Prussia against the exhorbitant power of the Russian empire. To a nation at war with Prussia, Denmark may constitute a valuable ally; but difference in religion, and other causes, have secured this state from the influence of Austrian policy. To France it may be conceived that Denmark would now prove a more useful and near ally than Sweden, the connexion with which kingdom was grounded on peculiar circumstances in tne 17th century, before the dawn of Prussian greatness; and at present hardly a case could be imagined in which Sweden could yield the smallest assistance to France. The natural and deep connexions between England and Russia would, on the supposition of a firm alliance against the latter power, of course estrange the former from Denmark.

* They yield about 21,000 barrels sugar, 9000 rum, 300 quintals of cotton, besides coffee and fruits. In 1803 slavery was to cease.

[1] Bœtticher's Tables. Catteau, ii. 84. computes the revenue at 7,270,172 livres.

† It would be wise in both the Scandinavian sovereigns to abandon fabulous and interfering titles; and to content themselves with the general style of Sweden and Denmark.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the superior Danes differ little from those of the same classes in other parts of Europe. To the disgrace of the government the peasantry continue in a state of vassalage; except those of the crown, who have been recently delivered by the patriotism of the heir apparent, and a few other instances. They are of course idle, dirty, and dispirited; while those of Sweden appear to have been always free; nor would it be easy to fix the period when vassalage, so foreign to the nature of the northern governments, first began in Denmark. In addition to this radical cause of the want of national energy, property is ill divided; and the middle classes, especially that of yeomanry, the glory of England, are almost unknown. In Norway, on the contrary, where the baneful effects of the feudal system had not penetrated, every peasant breathes the air of freedom, except those of a few noble estates near Frederickstadt. "The benefits of the Norway code are so visible in its general effects on the happiness and in the appearance of the peasants, that a traveller must be blind who does not instantly perceive the difference between the free peasants of Norway, and the enslaved vassals of Denmark, though both living under the same government[1]." Among the numerous inconsistencies of human nature it is indeed one of the most singular, that absolute monarchs should be so anxious to improve the breed of their horses, and to debase that of their subjects. The able writer last quoted proceeds to observe that the Norwegian peasants are spirited, frank, open, and undaunted, yet not insolent; and, instead of the servile bow, they shake the hand of their superior or benefactor: in the comforts of life they seem to yield to none, except some of the Swiss: their usual dress is of a stone colour, with red button-holes, and white metal buttons; and the women often appear only dressed in a petticoat and shift, with a close collar round their throat, and a black sash. Their usual bread, like that of the Scotish peasantry, consists of flat cakes of oatmeal; and in times of great scarcity is mingled with the white inner rind of trees.

LAPLANDERS.] At the furthest northern extremity of Norway is the region of Finmark, or more properly Lapmark, being a large province possessed by the Danish Laplanders, and extending even to the east of Cape Nord towards Russian Lapland. The inhabitants of this wild and remote province have been described at considerable length by Leems, who has presented a complete and faithful picture of Laplandic manners[2]. This singular race of men is of small size, generally about four feet,

[1] Coxe, v. 9.

[2] Leemius de Laponibus Finmarchiæ. Copenhagen 1767, 4to. Scheffer treats of the Swedish Laplanders: of the Russian there seems no ample account.

with short black hair, narrow dark eyes, large heads, and high cheek-bones, a wide mouth, and thick lips, and of a swarthy complexion. In the southern part of Finmark they are mingled with Norwegians; but the northern wilderness is wholly their own. They call themselves *Same*, their speech *Same-giel*, and their country *Same-Edna*, being probably of the same race as the Samoieds. The language has only an affinity with the Finnish, but not nearly so much as the Danish has with the German[3]; and it would seem that they had anciently a different speech, which they enriched with large additions from that of their more polished neighbours the Fins. Towards the shore they build huts; and on the mountains use tents of a singular form, being flatly conic, and divided into two parts by a kind of passage, each part having three rude subdivisions, only marked on the floor; the two furthest for the master, mistress, and guests; the middle on each side of the fire for the children: while those nearest the door are assigned to the servants; behind whom the cattle also find refuge, these being indeed few, while the rein-deer form their chief wealth. The sun is here absent for seven weeks; yet from ten in the forenoon to one in the afternoon there is a kind of twilight even in the shortest days, so that one may read without a candle; but the stars are very visible, and the moon, when apparent, shines all the day. In return the sun never sets for seven weeks of summer; but his beams are dull and remiss in the night, when he assumes a ruddy hue. Several rivers, particularly the Tana in eastern Finmark, which sometimes swells to a great height with the melted snows, supply salmon, and other fish, a considerable part of the Laplandic food; but at a festival are seen mutton, or rein-deer, and mead. The men wear conic red caps, lined with fur, and a kind of robe of cloth or skin; the poor sometimes using that of salmon, which appears like a white shagreen: the head and neck are protected with a sort of cowl, and the vest is of undrest sheepskin, the wool inwards. The head-dress of the women is narrowed in the middle, whence it widens like a bason at the top; and the vest, and robe resemble those of the men. Their amusements are shooting with the bow at a mark, a kind of tennis, and a game resembling draughts. They are also fond of wrestling, and other exercises[4]. They were formerly addicted to magic, and were fabled by incantations to invoke a demon in the shape of a fly, which was called the *gan-fly*, and commissioned to sting their enemies. Till recent times they were immersed in paganism, regarding particular mountains and rocks as holy: their chief god was Radien, who dwelled in the starry heaven; in the lower aerial regions were Beivi or the sun, a god, as Grotius has observed, very unjust to them; with Horangalis or the thunderer, and other divinities. On earth were the gods of hunting and fishing; and the goddess Maderakko, with her daughter Sarakka, a kind of Venus, who prepared the body after Radien had sent the soul. The Saivo Olmak, or gods of the mountains, were supposed to be oracular. For a more full account of this mythology the reader is referred to Leems. The places of sacrifice were chiefly holy mountains near the firth of Waranger, and along the Tana, and some on the bay of Porsanger. Their magical drums and songs are already trivial.

Amidst the conversion of the northern nations to Christianity, the Laplanders have been unaccountably neglected. Eric Bredal, bishop of Drontheim, made some vain attempts about the year 1660; but the royal mission was not founded till 1714; and extended to the Laplanders of Finmark, with those of Norland to the south, being a considerable portion of the diocese of Drontheim. Since that period the missionaries have exerted themselves with great success; there being commonly two for Finmark, one for the east, who presides over Waranger, Tana, and Laxefiord; the other for the west, over Porsanger, Hvalsund, and Alten[5]. Leems well delineates the hardships

[3] Leems, p. 11. [4] Ibid, 388. [5] Ibid, 570, &c.

suffered by these missionaries; among which, the cold is so excessive, that, when he was sitting near a strong fire, the wall behind would present his shade in thick hoar frost.

The manners and customs of the Greenlanders shall be considered in treating of North America. Suffice it in the mean time to mention that the curious canoes, only capable of containing a single person, and which are sometimes driven as far as the northern isles of Scotland, where they are said to belong to Finlanders, are in truth only known in Greenland; whence they are driven by the violence of the western wind: nor is the distance greater from the south of Greenland, than from the north of Finmark: where, as appears from Leems, the canoes are of a very different construction.

The people of Iceland being of Norwegian extract, have few peculiar manners, but retain more of the ancient dress and customs of their ancestors. They are constrained to prepare flour from various plants described by Von Troil; and their chief animal nutriment is dried fish; the common beverage is syra, or sour whey kept in casks and left to ferment, beer being scarce.

LANGUAGE.] If we except the Laponic, the languages spoken in the Danish dominions are all sister dialects of the Gothic. The Icelandic is the most ancient and venerable; and being esteemed the most pure dialect of the Gothic, has engaged the attention of many profound scholars, who have considered it as the parent of the Norwegian, Danish, and Swedish, and in a great degree of the English, though it would seem that this last is more connected with the Frisic, and other dialects of the north of Germany. In the ancient Icelandic the Lord's prayer is as follows:

Fader uor som est i Himlum. Halgad warde thitt nama. Tilkomme thitt Rikie. Skie thin Vilie so som i Himmalam so och po Iordaunè. Wort dachlicha Brodh gif os i dagh. Ogh forlat os uora Skuldar so som ogh vi forlate them os Skildighe are. Ogh inled os ikkie i Frestalsan. Utan frels os ifra Ondo. Amen.

In the Finnish it is as follows:

Isa meidan joca olet taiwassa. Pyhitetty olcon sinum Nimes. Lahes tulcon sinum Waldacundas. Olcon sinum tahtos niin maasca cuin taiwasa. Anna meile tanapaiwana meidan joca paiwainen leipam. Sa anna meille meidan syndim andexi nuncuin mekin andex annam meidan welwottistem. Ja ala jahdata meita kiusauxen. Mutta paasta meita pahasta. Amen.

And thus in the Laplandic:

Atki mijam juco lee almensisne. Ailis ziaddai tu Nam. Zweigubatta tu Ryki. Ziaddus tu Willio naukuchte almesne nau ei edna mannal. Wadde mijai udni mijan fært pæfwen laibebm. Jah audagaſloite mi jemijan suddoid naukuchte mije andagasloitebt kudi mije welgogas lien. Jah sissalaidi mijabni. Æle tocko kæckzællebma pahast. Amen.

It will hence appear that the Laplanders have borrowed some terms from the Gothic, as well as from the Finnish.

LITERATURE.] The literature of Denmark cannot aspire to much antiquity, having followed, as usual, the introduction of Christianity, which was not established till the 11th century. In the next century lived Saxo Grammaticus, whose history of Denmark abounds with fable, but whose style and manner are surprisingly classical for that age. His contemporary or predecessor, Sveno, is more veracious and concise, and is esteemed the father of Danish history. In general the ancient literature of Denmark is much more opulent than that of Sweden, as the collection of Danish historians may evince. Norway cannot boast of a native writer till a recent period; Theodoric the monk of Drontheim, who wrote a short history of the ancient kings, being supposed to have been a German. But it is a truly singular circumstance in the history of European literature, that letters highly flourished in the remote republic of

of Iceland, from the 11th to the 14th century; and independent of the fabulous Sagas, which might be counted by hundreds, the solid and valuable works then produced in that island might fill a considerable catalogue. From Iceland we derived the Edda, and our knowledge of the ancient Gothic mythology. From Iceland the Swedes, Norwegians, Danes, and Orcadians draw their chief intelligence concerning their ancient history, Snorro in particular being styled the Herodotus of the north: and the Landnama, or book of the origins of Iceland, is a unique work, displaying the names and property of all the original settlers, and the circumstances attending the distribution of a barbaric colony.

After the restoration of letters Denmark continued to maintain her wonted ascendancy over Sweden; and the name of Tycho Brahe is yet celebrated, but his little isle of Hwen, noted for his astronomical observations, now belongs to Sweden. This last kingdom has for a century been more distinguished in literature than Denmark, which has been chiefly occupied in history and antiquities, while Sweden, without neglecting these provinces, has also cultivated with great success the most interesting branches of natural history. The names of Arnas Magnæus, Langebèk, Schoening, and Suhm, are eminent among the cultivators of national history; and Holberg was a writer of wit as well as of erudition*. The botany of Denmark has been illustrated by Œder; and Niebuhr is distinguished as an intelligent traveller: but in other paths of science and literature there seems to be a deplorable deficiency; nor would it be easy to specify a Danish poet, philosopher, physician, or able and critical historian.

EDUCATION.] The silence of travellers and geographers concerning the modes of education pursued in different countries has been more than once regretted in this work; but the materials are not equally deficient concerning Denmark. While in Sweden there is only a school in each of the large towns, maintained at the expence of the crown; in Denmark each parish is provided with two or three schools, where children are taught to read and write their native tongue, and the principles of arithmetic; the schoolmasters are allowed about 12l. a year, with a house, and some other advantages[6]. There are besides many Latin schools, maintained at the royal expence; 16 in Holstein; 11 in Sleswic; 19 in Denmark Proper or Jutland, and the isles: but only four in the wide extent of Norway; and two in Iceland. These have a rector or chief master, a conrector, and two or three assistants; but the smallest have only one master, the salaries being from 60l. to 200l. a year. There is also a special seminary for the Laplanders at Bergen: and at Soroe, Odensee, and Altona, there are superior academies of education.

UNIVERSITIES.] The universities are at Copenhagen, and Kiel. There ought to be another at Bergen. The royal academy of sciences was founded in 1742, but has been more distinguished in national antiquities, than natural history. In 1746 was founded the society for the improvement of northern history, also styled the royal society of Icelandic literature. There is another respectable institution at Drontheim, styled the royal society of sciences. These foundations confer honour on the Danish government; and will doubtless contribute to diffuse science, and inspire emulation.

CITIES AND TOWNS.—COPENHAGEN.] Copenhagen, the chief city of Denmark, stands in a delightful situation, on the eastern shore of the large and fertile island of

* From the products of his literary labour he founded portions to marry poor girls. Catt. iii. 17.

For Danish authors see the remarks of Fabricius, at the end. Catteau iii. 132, mentions Ewald, Vessil, and Tulin, as the fathers of Danish poetry: Buggé in astronomy; Loevonorn and Morville in geography; Schlogel in statistics. M. Neergaard is an able mineralogist.

[6] Coxe, iv. 57. v. 187. See also Catteau, iii. 63, who celebrates the foundations by Pless and Reventlow.

Zeeland, about 25 British miles to the south of the noted Sound, where the vessels that visit the Baltic pay a small tribute to Denmark. It is the best built city in the north, for though Petersburg present more superb edifices, yet Copenhagen is more uniform; the houses being mostly of brick, but a few of freestone from Germany [7]. The streets are rather narrow, but well paved. This city only became the metropoplis in 1443, being formerly an obscure port, whence it retains the name of Kiobenhaven, or the harbour of the merchants, and it has little claim to antiquity*. The royal palace, which was a magnificent pile, was consumed by fire a few years ago: and the city suffered dreadfully from the same cause in 1728. It is regularly fortified, the circumference being between four and five miles, and the inhabitants about 90,000. The harbour is spacious and convenient, having on the south the isle of Amak, peopled by the descendants of a colony from East Frisland, to whom the island was granted by Christiern II., to supply his queen with vegetables, cheese, and butter, a destination still retained. The ale-houses are computed at 1900. The magistrates are appointed by the king; but the burgesses have deputies to protect their rights.

BERGEN.] Next in dignity, though not in population, is Bergen, the capital of Norway, founded in the year 1070, though some ascribe the foundation to the preceding year. It is seated in the centre of a valley, forming a semicircle round a small gulph of the sea. On the land side it is defended by mountains; and on the other by several fortifications. All the churches and many of the houses are of stone. The castle and cathedral are remarkable edifices. The chief trade is in fish, hides, timber, &c. and Bergen was formerly connected with the Hanseatic towns. It retained the right of striking money till 1575. This city, being chiefly constructed of wood, has been exposed to repeated conflagrations, among which the most dreadful were those of 1248, 1472, 1640, 1702, 1756, and 1771; during which last it is said that the flames were visible in the isles of Shetland, or at least the red reflexion in the sky. The population is computed at 19,000 [8].

ALTONA.] The third city of Denmark, and indeed the second in population, is Altona on the Elbe, within a gun-shot of Hamburg, originally a village of the parish of Ottensen; but in 1640 it became subject to Denmark, and was constituted a city in 1664. In 1713 it was almost entirely reduced to ashes by the Swedes, but its commerce was afterwards so much fostered by the Danish sovereigns, as a diminutive rival of Hamburg, that it is computed to contain 25,000 inhabitants [9].

CHRISTIANA.] Christiana †, in the south of Norway, must also be named among the chief towns, though it olny contain 10,000 souls. It stands in the midst of a fertile country; and is by some esteemed the capital of Norway, because it contains the chief court of justice, and is unquestionably the most beautiful town in that kingdom. It was founded by Christiern IV., in 1624, after Opslo was consumed by accidental fire. Christiana being situated in the midst of iron and copper mines, and not far from the celebrated silver mines of Kongsberg, the export of metals is considerable; but tar and deals form the chief articles. The deals are mostly sent to England; the red wood being produced from what is called the Scotch fir, and the white from the spruce fir [10].

[7] Coxe, v. 126.

* The most ancient capital was Leyre, or Lethra, near Roskild, which last became the metropolis about A. D. 950. Mallet Abr. p. 13. For Roskild see Busching, i. 182. Coxe, v. 262.

[8] Busching, i. 369. Catteau says 16,000.

[9] Busching, ii. 68. In 1771 Christiansund, on the border of Sleswig, was founded by the Moravians, and is a thriving place.

† *Christiania* is harsh and scarcely pronounciable.

[10] Busching, Coxe. Christiansund, founded by Christiern VI., in 1734, contains 3000 souls. Fabricius Voy. en Norwege. p. 488.

DRON-

DRONTHEIM.] Drontheim, about 270 British miles to the north of Bergen, was anciently called Nidaros. The inhabitants are only computed at 8000; but as this is the most northern city in Europe except Tornea, the population cannot of course be great. Drontheim is situated on the river Nid, whence it derived its name, and was founded in the year 997, being the residence of the ancient kings of Norway, and afterwards an archbishopric, suppressed at the reformation. Of the cathedral, which was built of marble *, the choir also remains. There is some commerce in wood, fish, tallow, and copper from the mines of Medal and Roras. The other towns of Denmark, as Gluckstadt, Elsinore, Flensburg, Kiel, Arhus, &c. have only from 300 to 6000 inhabitants †.

EDIFICES.] The chief public edifices are in the cities. The castle and palace of Cronberg, and the two other royal villas in Zeeland, do not merit a particular description, the buildings and gardens being generally in an antiquated taste. The roads in Denmark and Norway were till lately much neglected, and formed a striking contrast with those of Sweden, but since 1798 great improvements have been made.

INLAND NAVIGATION.] The chief inland navigation of Denmark is the canal of Kiel, so called from a considerable town in the north of Holstein. This canal is intended to unite the Baltic with the river Eydar, which flows into the German Sea. The extent of this important canal is about 20 British miles and a half; the breadth 100 feet at top and 54 at bottom; the least depth is about 10 feet, so as to admit vessels of about 120 tons ||. It was begun in July 1777, and was finished in 1785. In 1798 the vessels that passed were 2,250. Jutland being generally a flat country, there is little doubt but great improvements might be effected by draining and canals, on the Dutch plan, were not an absolute government commonly adverse to industry.

MANUFACTURES AND COMMERCE.] The manufactures of the Danish dominions are few and unimportant. Coarse woollen, stockings, cottons in imitation of Manchester, linens, refined sugars are among the chief ‡. Some have been recently encouraged by the crown, which has paid more attention to commerce and agriculture than to the arts and sciences; though the former deplorable state of the roads, in which all travellers agreed, evinced that the Danes had not just ideas of improvement. The chief exports of Denmark consist of native products. Jutland with the isles, Sleswic, and Holstein, generally export corn to a considerable amount; and the horses and cattle of the latter province furnish a supply to Holland. The cream coloured horses of Oldenburg, a small maratime district in Westphalia, formerly belonging to the Danish kings, who thence derive their origin, are of well known majesty and beauty. The chief products of Norway are wood, hides, chiefly those of the goat; with silver, copper, and iron; while Iceland exports dried fish, falcons and hawks, and eider-down. The commerce of this kingdom has been greatly improved since the acquisition of Altona, and the opening of the Kiel navigation. The colonies in the East and West Indies also supply some resources §.

* By recent accounts, lapis ollaris.

† The town of Hammerfest, recently founded on the borders of Finmark, has already become a mart. Cat. ii. 217. Will no example teach us, that a city on the western coast is the only solid plan of improving the Highlands of Scotland?

|| Coxe, v. 301.

‡ See Catteau's able statistic work for the details.

§ Mr. Marshall, or rather Sir John Hill, ii. 289, pronounces Denmark to be in a flourishing situation; and justly warns his readers not to trust to Lord Molesworth, whose book is a mere declamation in favour of the whig aristocracy, which he confounds with liberty.

For a minute account of the state of the commerce the reader is referred to the work of Catteau, which may be regarded as one of the best statistical works which has ever been published. The docks at Copenhagen were considerably improved by Gerner, an able mechanician. The number of Danish seamen is computed at 30,000. The effective ships of the line, in 1801, were only 22, while there were seven

old

old dismasted vessels. In 1795 there were exported from Denmark 6000 horses, 22,000 beeves, 9000 tons of salted meat. Aalborg in Jutland used to export great quantities of salted herrings. The Chinese trade from 1780 to 1793, had yielded more than 3,000,000 rix dollars; and about the same sum was gained by that to India. The exports of timber from Norway, in the year 1799, were 1,169 cargoes, containing more than 60,000 *lasts*, of which about two-thirds passed to the British dominions. In the same year Norway exported 261 cargoes of fish, chiefly to France, Spain, and the Mediterranean: the number of ships above ten *lasts* belonging to Denmark Proper are 683, to Norway 747, and to the two duchies of Sleswig and Holstein 743; in all 2183, conducted by 18,900 mariners.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE kingdom of Denmark proper, consisting of those ancient seats of the Danish monarchy, the isles of Zeeland, Funen, Laland and Falster, with others of inferior size; and the extensive Chersonese or peninsula, which contains Jutland, Sleswic, and Holstein, may be considered as possessing a humid, and rather temperate climate. Yet the winter is occasionally of extreme severity, and the sea is impeded with ice. Norway, chiefly extending along the west side of the Scandinavian Alps, exposed to the vapours from the atlantic, is not so cold a region as might be conceived. Finmark indeed feels the utmost rigour of winter; while in Iceland, on the contrary, that season is unexpectedly moderate, so as generally to permit the natives to cut turf even in January.

FACE OF THE COUNTRY.] The aspect of such wide and detached regions may be conceived to be greatly diversified. The isle of Zeeland, which is about 700 miles in circumference, is a fertile and pleasant country, with fields separated by mud walls, cottages either of brick or white washed, woods of beech and oak vales, and gentle hills*. The same description will apply to Funen, which is about 340 miles in circumference, and which is said to be as well cultivated as most of the counties in England. Holstein and Sleswick are also level countries; and though Jutland present many upland moors, and forests of great extent, especially towards Aalborg or in the centre of the northern part, yet there are fertile pastures; and the country being marshy and not mountainous, might be greatly improved, especially if the proprietors were to reside upon their estates, instead of committing them to the care of stewards. Norway is on the contrary perhaps the most mountainous country in Europe; but in the south there are tracts of great fertility. Mr. Coxe describes this part as being sometimes fertile and agreeable; and though often rocky, the soil is rich. "The face of the country is prettily sprinkled with numerous lakes and rivulets, and thickly dotted with cottages, rudely though not unpleasantly situated on rocky eminences, in the midst of the luxuriant forest[1]." The Norwegian alps are frequently covered with dark forest of pines and fir; and the perpetual snow of the peaks is rarely accompanied with the glaciers and other terrors of the Alps.

SOIL AND AGRICULTURE.] By the abolition of commons agriculture has recently been much advanced. Zeeland chiefly produces barley and oats; Funen buck wheat; while wheat is confined to Laland and Falster †. In Holstein, and the south of Jutland, the soil is fertile; in Norway, though vegetation be in some places so quick that the corn is sown and reaped in six or seven weeks, yet the portion of arable ground is

* Sandhills are sometimes destructive on the coast; the chief protection from their ravages is the *elymus arenaria*. Catteau, i. 84.

[1] v. 31.

† Catt. ii. 132.

scanty and far from sufficient to supply the consumption *. In the autumnal rains, to which Norway is exposed, the peasants dry their harvest in a method which might be found useful in the Scotish Highlands, by erecting poles crossed by others, on which the sheaves are filed [2]. That mountainous country is however abundant in pasture and cattle; which, as in Swisserland, are driven to the heights in summer; and a patriotic society has so much encouraged agriculture, that within these 50 years estates have risen nearly one third in value [3]. In the extensive island of Iceland, there is not much room for agriculture; which has however greatly declined since the period of the republic, when treatises were written on this interesting subject.

In 1789, the rivers in Norway suddenly rose to a great height, to the lasting injury of the agriculture †.

Rivers.] In the kingdom of Denmark proper the rivulets are numerous; but scarcely a river of any note except the Eydar, the ancient boundary between Denmark and Germany. Towards the north of Jutland an extensive creek of the sea, called Lymfiford, penetrates from the Cattegat to within two or three miles of the German sea, navigable, full of fish, and containing many islands [4]. This remarkable inlet, which is as it were a Mediterranean sea in miniature, might well be expected to enrich the neighbouring country, but seems to be neglected, as travellers and geographers are silent. There are several other creeks which are by the Danes styled Fiords, or Firths, but scarcely another river worth mentioning; for the Guden, which becomes navigable at Randers, though celebrated for its salmon, is of a very confined course.

In Norway, as in Sweden, the largest rivers are called Elven or Elben. Those that rise in the Alpine chain, and run towards the west, have in consequence but a short course; and the chief ports, as in the west of Scotland, are supplied by creeks, or inlets of the sea; the great depth of the water and height of the shore rendering this coast not a little unsafe to navigators. The chief river of Norway is the Glom or Glomen, which is not navigable, but full of cataracts and shoals; that near its mouth being about 60 feet; yet about 50,000 trees are annually floated upon it to Frederickstadt. Before it receives the Worm from the lake Mioss, it is as broad as the Thames at Putney [5]; and its rugged course must render it a tremendous torrent. The Glomen, also called the Stor Elv, or great river, springs from the lakes of Oresund on the north of the Fœmund, and runs nearly south about 300 British miles ‡.

Next may be named the Dramme, which flows into the west side of the bay of Christiana, having received the Beina, and other considerable streams. Less remarkable rivers in the south of Norway are the Louven, the Torrisdals which runs by Christian Sand, and others flowing from numerous lakes. In Finmark the most considerable river is the Tana, which is followed by the Alten; both rising in the mountains to the north of Swedish Lapland, and flowing into the Arctic ocean.

* See some remarks by Fabricius at the end. This intelligent author observes, that potatoes do not thrive in Norway, because the summer is so short. Voy. en Norw. p. xxvii. But that excellent root begins to be common in Denwark. Catt. ii. 136. The *Festuca fluitans* yields a fine flower, while the plant feeds horses. Catt. ii. 138. As this plant thrives in marshes, it might be highly valuable in our agriculture.

[2] See the plate in Pontoppidan's Norway. In Russia a kind of oven is used.

[3] Coxe, v. 18. † Catt. i. 115.

[4] Busching, i. 228. Catteau, i. 89, who says, that the mouth gradually gets shallow; but the towns on the Lymfiord are still regarded as sea-ports. Herrings and eels abound. Id. ii. 154.

[5] Coxe, v. 62.

‡ In the map by Homann, corrected by Hubner, and prefixed to Pontoppidan's natural history of Norway, the source is very different; and that author joins in the error, p. 91 When it is considered that the book and the map were published in 1751, when Linnæus in the adjacent kingdom was diffusing the light of natural science, the errors of both are truly surprising. Perhaps the first tolerable maps of Norway known in England, were that given by Mr. Coxe, and that contained in Arrowsmith's map of Europe. But even recent maps have not always been improved by these examples.

LAKES.] The lakes in the Danish dominions are numerous, the most extensive being in the south of Norway. The lake of Mioss is about 60 British miles in length, but the breadth is in general little considerable, except towards the centre, where it is from 12 to 18 miles: it contains an island about ten miles in circumference, fertile in corn, pasture, and wood[6]. Next is the lake of Rands or Rands-Sion, which is near 50 miles in length, but not more than two in breadth. The lake of Tyri is a beautiful piece of water, about 15 miles in length and breadth, diversified with many bays and creeks: the environs are delightful, consisting of corn fields, fertile meadows, and hanging forests, backed by lofty mountains towering above each other[7]. Other lakes in the south of Norway are those of Ojeren, Or, Kroren, Tonhof, Tind, Huide, Nisser, Kiel, and Syredal. Further to the north is the large lake of Fæmund, about 35 British miles in length, by eight at its greatest breadth: this lake is celebrated by Bergman as being surrounded by mountains of great height. Yet further, in a northern direction, are found the lake of Sælbo, through which the Nid passes to Drontheim; and the lakes of Beitstadt and Snaasen. In Norland is that of Rys: and eastern Finmark presents that of Pasvig.

MOUNTAINS.—NORWEGIAN CHAIN.] In the kingdom of Denmark proper there are no heights, which can aspire to the name of mountains; but Norway is almost wholly an Alpine country. The grand chain, which divides that kingdom from Sweden, is known by distinct appellations as it passes through different provinces. The mountains of Joglefeld may be regarded as its southern extremity, which does not here extend to that point of Norway called Cape Lindes, the Naze of seamen, but branches off towards the east. Proceeding northwards Joglefeld is succeeded by Buglefeld, and Heklefeld. Hardanger Feld forms a more extensive denomination, and detaches a branch towards the south-west. Under the parallel of 61° the chain assumes the name of Filifeld, followed by Sognefeld, and Langfeld, which terminates a little beyond the 62° of north latitude. The chain now assumes a winding direction from west to east, and this part, which is esteemed one of the highest, is styled Dofrafeld. Again turning to the north-east we arrive at the parts towards the parallel of Drontheim, which are generally reckoned the most elevated, for towards Lapland the mountains decline in height. The successive names of this central portion are Rudfeld, Skarsfeld, and Sulafeld*. Jomafeld and Borrafeld, and some other local appellations, are continued by the general name of the mountains of Kolen, which pass along the east and south of Danish Lapland.

In a more general point of view, the southern part of the Scandinavian chain, running nearly north and south, and terminating at the province of Romsdal, is called LANGFIALL or the Long Mountains. Hence the part called DOFRAFIALL extends towards the east, ending above the lake of Aursund or Oresund; where it again proceeds almost due north. Here also a considerable branch proceeds by Swucku, &c. towards Sweden†. The third part of the range, from the north of Oresund and the vicinity

[6] Coxe, v. 59. [7] Ib. 53.

* The fabulous Pontoppidan calls this central chain (p. 41.) Sevebierg, or the seven mountains; and in his map the eastern parts towards Sweden are called Daarfeld. The name of Sevebierg, or the seven mountains, is palpably local, and has no reference to the general chain; though some writers affect to regard it as the same with Pliny's Sevo, which was in Germany. This term is on the contrary not only local, but recent, and perhaps only applies to the hills called the Seven Sisters, p. 46. It is unknown to former writers; and he confesses, p. 41, that the only general name is LANGFELD, or the Long Mountains. See Schoning's map of Norway in the middle ages.

† It is to this last only that Pontoppidan gives the name of Sevebierg. It appears that the mountains of Dofra or Dofrine chain, which crosses Norway from south-west to north-east, in the centre between the Lang Fiell and mountains of Kolen, forms a line of demarcation, the part to the north having generally winds and weather the very reverse of that in the south. See Volney's view of the climate and soil of the United States of America, Appendix.

of the copper mines of Roras, is called the chain of KOLEN, extending between Norway and Swedish Lapland, and afterwards bending, in the form of a horse shoe, on the south of Finmark[8].

HEIGHT.] The height of these mountains was as usual extremely exaggerated, and compared with the Swiss Alps, till more exactness was introduced into Orology. Mr. Pennant[9] affords the most recent information on the subject. "Mr. Ascanius, professor of mineralogy at Drontheim, assures me that, from some late surveys, the highest in that diocese are not more than 600 fathoms above the surface of the sea; that the mountains fall to the western side from the distance of eight or ten Norwegian miles*; but to the eastern from that of 40. The highest is Dovre-fiæl in Drontheim, and Tille in Bergen. They rise slowly, and do not strict the eye like Romsdal-horn and Hornalen, which soar majestically from the sea. Professor Ritzius of Lund acquaints me that Kinnekulle, in Westro-Gothia, is only 815 English feet above the lake Wenern, or 931 above the sea. He adds that the following have been only measured to their bases, or to the next adjacent waters: Areskutan, a solitary mountain of Jæmtland, about four or five Swedish miles from the highest Alps, which separate Norway and Sweden, is said to be 6162 English feet above the nearest rivers; Swuckustoet within the borders of Norway, 4658 above lake Famund, and that lake is thought to be 2 or 3000 above the sea; and finally Sylfiællen, on the borders of Jæmtland, is 3132 feet perpendicular from the height to the base. By some late experiments the highest mountains of Sweden, between lat. 63 and 64°, have been found to be 6652 feet above the surface of the Baltic†; but no trees will grow on them at little more than half that height.‡"

CONSTRUCTION.] The construction of the Norwegian mountains has been little explored, nor is it understood whether the chief heights be calcareous like those of the Pyrenees, or granitic as is rather to be conceived. Some considerable mountains consist of sandstone; but we are equally ignorant whether this be the siliceous, the agillaceous, or the calcareous sandstone. Norway abounds in beautiful marbles; of various kinds, whence it appears that a considerable part is calcareous; and Pontoppidan has engraved a precipice full of large shells. The lapis ollaris, which Pontoppidan calls keegsteen, is found in great quantites, and with it were built the cathedral of Drontheim, and other edifices[10]. This is generally found in the vicinity of granite; which last seems to be the pebble stone of that author. Asbestos and amianthus also indicate granite; and rock chrystals are found of great size and beauty, with talc, garnets, and amethysts. Chalk and flints are unknown. Further illustrations will arise in speaking of the mineralogy §.

[8] Busching, i. 378. [9] Arctic Zoology, i. cviii. * Of 18,000 feet each.

† "Mr. Tornsten in 'Act. Reg. Ac. Holm."

‡ There is an erroneous note in the former editions from a mistake concerning the length of the Swedish ell, which is not two feet. Bergman (*Journal des Mines*, No. xvi. p. 65,) says that Swukku, one of the highest of the Norwegian Alps, is 2268 ells in height, that is about 4500 feet. The highest summits of this chain cannot exceed 7000 feet above the sea.

Busching, i. 331, says that the mountains Tind and Goule, in the south of Norway, are the highest; but in this he errs in copying Pontoppidan, who says they are the highest in that quarter. The highest sharp summits are, in Norway, as in Swisserland, called Horns, as Hornalen in Nordfiord, Sneehorn and Skopshorn in Sundmoer, Romsdal-horn, and others. Many lofty mountains branch out on the west towards the sea.

Of the high mountain Wigeln, and the lake of Oresund, there is a view in Hermelin's Atlas. There are also views of some Swedish and Laponic mountains, as Ruten near the lake Malmagen; of the high ridge between Herdal and Norway, which is patched with perpetual snow; and some in Lulea Lapmark. If there be any glaciers in Norway or Lapland they have escaped Scandinavian research, and the aspect of the mountains rather resembles those of Scotland than of Swisserland. Catteau, i. 108, says Swukku is 2268 Danish ells (each two feet) above lake Fæmund. Mount Jisbre in the north of the government of Bergen, has perpetual and increasing glaciers, as has Foglefonden in the south of the same government. Ib.

[10] Pontoppidan, i. 166. ii. 276.

§ Bergman, p. 63, observes that many of the mountains of Norway are of pudding-stone, sometimes of quartz pebbles, united by grey micaceous cement (the same substance occurs in the Orkneys). Some are of hornblende slate in which garnets appear. Ib. 74.

Forests.] There are some woods in the Danish isles, and forests in Jutland. The Norwegian mountains are generally clothed with pines and firs; and almost the whole country may be regarded as a forest, which supplies Europe with masts, and other large timber. The mountains of Scotland were once equally covered, though now denuded, nature sowing trees exceedingly thick, while man plants them so thin that the plantation perishes for want of mutual protection. Norway may in this respect recall a just image of Britain as it appeared to the Romans.

Botany.] The botany of Denmark proper does not materially differ from that of the other northern provinces of the German empire, which has already been slightly sketched in the account of Prussia, and will be hereafter noticed more minutely when describing the other states of the Germanic body. The botany of Norway will be incorporated with that of the rest of Scandinavia under the article Sweden. All that is necessary therefore in this place is to mention those plants natives of Denmark, which are either not at all or but sparingly found on the other side of the Baltic*.

Denmark, together with its German dependencies, is for the most part a flat country, and a large proportion of its surface is taken up with marshes and lakes: here and there occur ridges of low rocks, but no mountains even of the third magnitude are to be met with: the remainder of the territory is devoted to cultivation and pasturage, of which the most celebrated grazing tracts are included in the duchy of Holstein.

The sea shore affords the beautiful pulmonaria maritima *sea lungwort*; and Danish *scurvy-grass*. The dry open hills produce anemone pulsatilla, *pasque flower*; dianthus superbus, *fringed pink*; delphinium consolida, *larkspur*; and astragalus Danicus. The woods and thickets yield *red dog-wood*; pulmonaria officinalis and augustifolia, *common* and *narrow-leaved lungwort*; impatiens noli-me-tangere; and the rare serapias rubra, *red helleborine*. The marsh ditches abound with stratiotes aloides, *water soldier*; and the meadows and hedge-sides furnish ornithogalum luteum and nutans, *yellow* and *nodding star of Bethlehem*; ranunculus lanuginosus, *woolly crowfoot*; and oenothera biennis, *evening primrose*.

Zoology.] The Danish dominions being of such great extent, and variety of climate and aspect, there is a great diversity in the animal productions. The horses of Norway and Iceland are as remarkable for diminutive size, as those of Holstein and Oldenburg† are for the contrary quality. The beeves are also excellent and very numerous in Holstein and Sleswig. Among the more peculiar animals may be first named the rein deer, common in Finmark and throughout Lapland. This animal resembles a stag, but is stronger; and the deep division of his hoofs is adapted to tread on the snow, being suited by Providence to a cold climate, as the camel is to the hot desert. The antlers of the rein deer are longer and more branched than those of the stag, and they also decorate the brows of the female. These animals are still numerous in a wild state, though the Laplanders have reclaimed great numbers, which supply the place of horses and cattle. The elk is a more southern animal, and sometimes appears in Norway, which is infested by the bear, the wolf, and the lynx. The glutton is also rather a peculiar animal; and the beaver constructs his mansion in Norway with the same skill as in North America. The lemming, or Norwegian mouse, proceeds from the ridge of Kolen, and sometimes spreads desolation, like the locust. These animals appear in vast numbers, proceeding from the mountains towards the sea, and devouring every product of the soil: it would seem that after consuming every thing eatable in their course, they at last devour each other. This

* Flora Danica—Kerstens, Floræ Holsaticæ primitiæ.

† Oldenburg has been recently assigned to the younger branch of the house of Holstein Gottorp. Bruns, Geog. &c. Riesbeck, iii. 121, says that the detached principality contains 75,000 souls; the revenue 40,cool.

singular

singular creature is of a reddish colour, and about five inches in length. Norway also boasts of some peculiar birds, as the picus tridactylus, and the tetrao lagopus. The snake called aspis is also found there. In Danish Lapland the squirrel, which is red in the summer, in the winter becomes grey[11]. The author last quoted maintains the fable of the kraken; and his description, derived from the natives of Norland and Finmark, corresponds with that of Pontoppidan. The salmon supplies a considerable part of the Laplander's food; and vast numbers are transported on rein deer from the shores of the Tana. Hares are also common in that remote region: and the bear, lynx, and fox, are less welcome visitants; nor are the glutton and the beaver there unknown. About Roras in Norway the latter animal is sometimes found white*.

MINERALOGY.] The mineralogy of the Danish dominions is chiefly restricted to Norway, for in Jutland and the isles no important discoveries have arisen, though it be probable that iron, and perhaps coal, may be found. Jutland supplies tripoly and fullers' earth, with some alum, and vitriol. The isle of Moen has hills of chalk; and porcelain clay is found in Bornholm. These regions seem chiefly calcareous, yet freestone is rare. Norway on the contrary abounds in various metals. About the year 1645 some gold ore was found near Arindal, of which ducats were struck. The gold mine of Edswold, about 30 British miles north of Christiana, was discovered in 1758, but has been little productive†. In gold Norway yields greatly to the Swedish mines of Adelfors, and only claims the superiority in silver, the mines of Kongsberg, about 40 British miles to the south-west of Christiana, having been long reputed the richest in Europe; and one mass of native silver in the royal cabinet weighs 409 marks, being worth 3000 rix-dollars or 600l.[12] These mines are minutely described by Bergman, who informs us that the rock consists of vertical banks of micaceous schistus, with garnets, limestone, and quartz. The richest veins are those of a greyish quartz mingled with small black mica, and reddish petrosilex; but especially in a fine-grained white quartz, and a little calcareous earth, or where the quartz and mica are in alternate strata; the thickness of these banks or layers varying from an inch to three fathoms; and some of them are impregnated with iron. They are passed transversely by the veins of metal, from half an inch to more than two feet in thickness, sometimes accompanied with large grained limestone, but more often with spar; and sometimes with quartz, fluors, white, blue or violet selenite, and fossil cork, and sometimes with pyrites, yellow copper ore, and blende[13]. The ferruginous layers are the most productive. These mines were discovered in 1623 by two peasants, who were diverting themselves with throwing stones; and in consequence the town of Kongsberg was founded. They are worked by 36 shafts, and used to yield about 70,000l. annually,

[11] Leems, p. 219.

* The large beds of oysters, sometimes half a mile wide, and extending four ells under water, on the western coast of Sleswig, are said to have been laid by the orders of Canute the Great. Catt. ii. 172. Thirty English vessels, constructed for the purpose, make annually three voyages to Norway, each cargo being 16,000 lobsters. Ib. 212.

† Jars observes, vol. ii. that the gold of Edswold, eight Danish miles from Christiana, is in a vein of quartz and pyrites. The mine of Kongsberg, ib. 94, was disclosed by the threads of native silver on the rock; and he says that most of the mines now worked were discovered by the same means. The gangarts are calcareous spar, fluor, and mountain cork; and the native silver is also found in a grey rock (hornblende), which may be regarded as the top and bottom of the mine.

[12] Coxe, v. 45.

[13] Journal des Mines, No. xvi. p. 50. The Baron de Born, in his *Lithophylacium, vel Index Fossilium*, Pragæ, 1775, 2 vols. 8vo. observes, vol. ii. p. 98, that the silver mountain of Kongsberg consists of black clay, intimately mixed with micaceous particles; but it is now known to consist of hornblende and hornblende slate, which often accompany the metals, and have the appearance mentioned by M. de Born. According to the same author, p. 146, the silver mountains on the north and south of Kongsberg are formed of *murkstein*, a mixture of quartz, white mica, and garnets. The same substance is found in the west of Scotland, and may probably indicate the precious metals.

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when 4000 men were employed; but recently 2400 have removed to the cobalt mines at Fossum, 20 miles to the north, and it is supposed that the produce barely defrays the expence. Yet they supply the mint with currency, the largest coin being of eight Danish skillings, or fourpence sterling; and it is esteemed a peculiarity of this mine, that it may be little productive during a year or two, when suddenly a rich vein is discovered which amply repays the loss of labour[14]. Kongsberg is a flourishing town of 6000 inhabitants, situated amidst hills and rocks, which branch off from the great Alpine chain, being about 80 British miles south-east of the Langfeld: the river Louven runs through the town, in a series of small picturesque cataracts.

Norway also possesses other silver mines at Iarlsberg in the same region, about 30 miles to the north-east, discovered in 1726, but of small account.

Copper.] The important copper mines of Roras, about 68 British miles south-east of Drontheim, were discovered in 1644. They are in the southern slope of the chain of Dofra, in a rock of what the Germans call hornschiffer, or hornblende slate, yet Bergman mentions quartz and mica as ingredients; and he adds that the gangart is *hornberg*, a kind of micaceous schistus, "of so fine a grain that neither the quartz nor the mica can be distinguished in its texture*." The veins are from six inches to six ells in thickness; and the ore of a pale yellow. The mine of Storward is in a high mountain; the rock being grey gneiss, which is followed by a blackish steatite. In general the mines of Roras are very productive, and a source of considerable revenue. Other copper mines are at Quickne and Selboe, about 50 miles to the east of Drontheim, and at other places, as Meldal and Foledal.

Cobalt.] The mines of Cobalt at Fossum, a recent discovery, must not be passed in silence. This metal yields smalt, or powder blue, used in painting pottery and porcelain, and in colouring starch; and the mine is supposed to produce a clear annual revenue to the crown of about 15,000l. Near it is a rich vein of quartz, containing large masses of talc[15].

Iron.] But the iron mines of Norway are esteemed the most profitable. They are chiefly situated not far from Arindal in the southern province of Christiansand; and near Skeen, between Arindal and Kongsberg†. Lead appears in the vicinity of Kongsberg; and there are alum works near Christiana. Norway produces abundance of marble, with some alabaster, and lapis ollaris. Rock chrystals occur of a large size, often brown or yellow like those of Bohemia and Piedmont, the Cairngorm stones of Scotland. In Iceland are found many volcanic productions, particularly black obsidian. The isles of Ferroe produce agate, jasper, and beautiful zeolites. Jade and magnets are also found in Norway; with curious garnets, especially the green, which are little known in other regions‡.

[14] Pontop. i. 183, &c. Coxe ut supra.

* Such indications are mentioned, as they may lead to discoveries in other countries; but Bergman's account is far from the accuracy of modern mineralogy, and his descriptions seem neither to refer to hornblende nor petrosilex. From Raspe's Ferber, 327, it appears that petrosilex was conceived to be quartz and mica intimately blended, so as not to be distinguished by the eye. It is equally difficult to explain Busching's meaning, i. 340, when he says the chief copper mines are at Werdenfiels. Roras is in Guledal.

[15] Coxe, v. 49. There is a mine of plumbago at Englidal. Catt. ii. 232.

† According to Busching, i. 341, ochre is found near Wardhus, in Finmark, of a beautiful sky blue, probably like that of Elba, and the sign of a rich iron mine.

‡ From the journey of the celebrated entomologist, Fabricius, into Norway in 1778 (Paris 1802, 8vo.), we learn that the iron ore of Arindal is black, mingled with quartz, that the gold mine of Edswold is in a mountain of quartz and mica, the gangart being ferruginous quartz. It is near Raholt not far from Christiana, on the route to the lake Mios. The copper mine of Roras consists of pyrites in quartz and argillaceous schistus. It was discovered in 1644 by a Laplander, who was hunting rein deer; and the mountain chiefly consists of micaceous schistus with schorl and garnets. M. Fabricius justly observes that all the mines greatly enrich the country.

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MINERAL WATERS.] In mineral waters the Danish dominions are very deficient; and those discovered in 1768 at Oersten in the Sondmoer appear to be little frequented.

NATURAL CURISOITIES.] While the southern parts of the Danish dominions present few natural curiosities, the northern provinces afford many singular features. The Moskoestrom, or Malstrom, is a remarkable whirlpool off the shore of Norland, which will involve boats, and even ships; nay the bellowing struggles of the whale have not always redeemed him from the danger: the bottom is full of craggy spires, and the noise truly tremendous. On the south of the Ferroe isles, there is another dreadful whirlpool. The volcanoes of Iceland may also be classed among the grandest features of nature. Among these Mount Hekla is the most remarkable, being situated in the southern part of the island, about 20 British miles from the sea, above which it rises to the height of about 5000 feet. The summit is covered with snow, except some spots where the heat predominates. The craters are numerous, but the eruptions rare; there having only been ten from the year 1104 to 1693, after which it remained quiet till 1766, when it emitted flames and lava. The mountains of Krabla near Myvatn in the north-west, and of Kattlegia, were more known than Hekla by their eruptions in the 18th century. The boiling springs of Iceland present a singular phenomenon: that of Geyser to the north of Skallholdt is the most remarkable, rising from an aperture 19 feet in diameter, and springing at intervals to the height of 50 or even 90 feet [16]. Of smaller consequence are several picturesque scenes in Norway, as the hills called the Seven Sisters in Helgoland in the parallel of Tornea. In the same district is the rock of Torghatten, with a perforation of great length and diameter, through which the sun may at times be seen. At Dolsteen, near Herroe in Sundmoer, is a cavern of great length; and at Limur, not far from Ourskoeg, is another cavern above a stream, which seems formerly to have flowed through this superior channel. About 20 miles to the north of Bergen, the rocks abound with singular petrifactions. The mountains are sometimes split and engulphed by subterranean waters, of which Pontoppidan relates some instances, more to be credited as a similar event recently happened in the south of France. The farm of Borre, in the province of Christiana, was in 1703 swallowed up with all its buildings, and there now remains only a chasm full of ruins and sand [17].

DANISH ISLANDS.

THE prime seat of the Danish monarchy having ever been in the isles of Zeeland, Funen, Laland, Falster and others of that groupe, they have been considered in the general description of the monarchy. In the east the furthest isle belonging to Denmark is that of Bornholm, a small but fertile spot conquered by the Swedes in 1645, and surrendered to them by the treaty of Roskild, 1658; but the inhabitants revolted the same year, and restored their isle to the Danish domination, under which it has since continued.

Off the western coast of Jutland are the isles of Nordstrand, Fora, Sylt, Rom, Fanoe, and others, which with Helgeland were known to the Romans; and the writers of that

[16] Von Troil, 160. In 1783 a new volcano appeared in Iceland. The mountain called Wester Scaptafield, on the east of Hekla, vomited a vast torrent of lava, which flowing in two directions overwhelmed many miles of country. See Stephenson's account in Danish. Copenhagen, 1785, 8vo.

[17] Busching, i. 360.

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nation appear often to have confounded them with some of the Orkneys, and even with the islands in the Baltic *.

The Norwegian coast presents one continued series of small and unimportant islands, most of them indeed uninhabited. Among a few worthy of mention may be named Karm, Bommel, Sartar, Hitteren, and others at the entrance of the gulph of Drontheim: the Vikten or Viktor islands are followed by those of Loffoden, the most numerous and extensive, and noted for the whirlpool of Malstrom. Among the dreary isles on the Laponic shore may be named Soroe and Mageroe, that of Wardhus, where there is a garrison in the Arctic ocean; and the isle or peninsula of Fiskeroe, part of which belongs to Russian Lapland.

The isles of Vikten or Viktor produce oats and barley: and it was from them that the powerful Rollo sailed to France. Those of Loffoden have excellent fisheries, and the pasturage suffices for numbers of sheep. The isle of Karm is chiefly remarkable for the high mountain of Augvald. The Norwegian isles are in general mountainous or craggy, like the corresponding coast, with precipitous rocks, and a sea from 100 to 300 fathoms deep washing their bases. Between them are numerous narrow creeks, overshaded by vast heights like those of the shore, and guarded as it were by innumerable smaller isles, and desart rocks, haunted by screaming sea-fowl.

For many years the Norwegians held the isles of Orkney and Shetland, which last was styled by them the land of Hialt, from an adventurer so called, whence the corrupt names of Zetland, Yetland, and Shetland. The Faroe isles remain an appanage of the Danish crown: they are seventeen in number, and not unfertile, producing some barley, and abundant pasturage for sheep. Small junipers, stinted willows, and birches, alone bear a diminutive image of trees. They were discovered prior to Iceland, in the ninth century; and export feathers, eider-down, caps, stockings, and even salted mutton and tallow. Beautiful chalcedonies and zeolites are found in the Faroe isles; but there seems no positive reason to believe that they were volcanic. The inhabitants do not exceed 5000 †.

The large and celebrated island of Iceland has been erroneously laid down in many maps. From that of La Crenne it appears to be in its greatest length N. to S. fifty-seven marine leagues, 171 geographical miles, breadth east to west 138 geographical miles, being one-third less than Ireland, The government was an aristocratic republic for about 387 years, till in 1261 it submitted to Norway. The maps of this country are far from being perfect; and the like complaint might justly be extended to the Dutch dominions in general; but as far as can be judged the chief range of mountains runs, like the Carpathian, from the south-east to the north-west, with some branches diverging north-east. This island forming so extensive a portion of the Danish dominions, several circumstances concerning it have been given in the general narration. The inhabitants are computed at 40,000. While it abounds in sulphur and subterranean fires, and volcanoes appear in every quarter, it would be too

* These isles have suffered greatly by the fury of the ocean. Nordstrand, after repeated attacks in the years 1350, 1354, &c. was at length almost totally swallowed up in 1634. Such an inundation arose on the 11th of October, at 10 o'clock in the evening, that there perished 6408 persons with 50,000 cattle; 1332 houses, 30 windmills, and six churches were swept away by the waves. There remained but a high part of the isle now called Pelworm. Helgeland, which has been subject to the Danes since the year 1714, has also been diminished by repeated assaults of the ocean. Busching, i. 293, 294.

† The Faroe isles are defended since the American war by the citadel of Thorshaven on the chief isle Stromoe. Catt. ii. 54. There is a considerable mine of coal under basalt.

The orthography *Faroe* is not only agreeable to etymology, but serves to distinguish them from Ferro one of the Canaries. An excellent and very interesting account of these isles has been lately translated from the Danish of Landt. London, 1810, 8vo.

bold a theory to suppose that so wide an expanse was ejected from the sea, not to mention that the surturband, or carbonated wood, found at a great depth, evinces a most remote vegetation. The highest mountains clothed with perpetual snow are styled Yokuls; and of these Snæfial, hanging over the sea in the south-west part of the island, is esteemed the highest, being computed at 6860 feet [1]. The mountains are said to be chiefly sand-stone, pudding-stone with petrosilex, steatite, and argillaceous schistus. The chief rivers of Iceland are in the east; the Skalfanda, the Oxarfird, and the Brua, all flowing from the south to the north. Some are white with lime, others smell of sulphur. The calcareous spar of Iceland is celebrated for its double refraction since the days of Newton: chalcedony, zeolite, lava, pumice, and malachite, or copper stalactites, are among the mineral productions. In the middle of the 14th century this isle was greatly depopulated by a pestilence called the Black Death *. A volcanic island recently arose to the south of Iceland, but afterwards disappeared. From Iceland a colony passed to Greenland, a short course of about 200 miles; but the Danish colony in Greenland has been long explored in vain, the eastern coast on which it was settled being since blocked up by the ice. This barbaric colony was little aware that its settlements belonged to another quarter of the globe, Greenland being now universally considered as a vast peninsula attached to the continent of America.

When the author was at Paris that distinguished entomologist, and learned professor at Kiel, Fabricius, communicated some observations on the account of Denmark, which, as he wrote them in the English language, shall here be given in his own words:

"Within the last twenty years the agriculture of Denmark is greatly bettered. We have introduced liberty and property amongst our farmers, and they have begun in consequence to build their houses on their estates; to divide and to enclose their lands, and to work them with much more industry. The products are thereby certainly doubled, and in many places perhaps tripled.

"The islands are particularly fruitful. They are flat and consist of a good clay, more or less mixed with sand and lime. They produce particularly great quantities of grain of all sorts, not only sufficient for our own consumption, but of which we sell a great deal to foreigners.

"Jutland is less fruitful, particularly the west coast, and the middle. It is sandy, has much heath, but produces a quantity of rye and of buck-wheat, and beech-wheat *(phagopyrum)*, upon which the inhabitants chiefly subsist. The east coast, on the contrary, is a fine fruitful country, of which the greatest part is laid out for cattle. It produces a great quantity of oxen, which they fatten in the summer on the rich marshes of Holstein, and drive in the autumn to Hamburg. It produces likewise a number of horses, which, under the name of Holstein horses, are well known. Schleswig and

[1] Pennant, A. Z. lxiii.

* Iceland is said to have suffered greatly by commercial monopoly, but the company was suppressed in 1759. Busching, i. 417. Every benefit ought certainly to be extended by the Danish government to the poor inhabitants of so remote and barren a country.

In 1784 a terrible mortality carried off 19,488 horses, 6,800 beeves, 129,947 sheep, Catteau, i. 131. seemingly exaggerated.

The cod fishery near Iceland begins at the point of Brederwick, and ends at that of Langerness, running by Cape North and the isle of Grims, and occupying more than two hundred Dutch vessels and about eighty French. *Kerguelen, Voyage dans la Mer du Nord*, Paris, 1771, 4to. p. 51.

Holstein

Holstein are very different countries. The west coast, from the river Elbe to Jutland, is taken in from the sea, or what we call *Morstur*. It is low, flat, without stone, hill or tree; and consists of a very fine fruitful blue clay. It produces in abundance wheat, barley, coal, &c. A great part is laid out in grass, where they fatten the oxen which they buy every spring in Jutland, and sell afterwards at Hamburg.

" The middle is more sandy, here and there overrun with heath; but it has many inland seas, and small rivers, and there is no want of water; it produces rye, oats, and *phagopyrum* in quantity.

" The eastern coast is diversified with small hills, overgrown with trees, extremely pleasant and fruitful. It consists of a yellow clay, more or less mixed with sand, and produces rich harvests of all kinds. A great part is laid out for grass to feed the number of cows, for the produce of butter, which is perhaps better and keeps better than any in Europe. We have a great number of ponds for fish, particularly carp, but formerly there were still more. They have dried them, and find it of more advantage to cultivate them. We have manufactures of different kinds. The chief manufacture in Jutland is wool. In all the other parts they have a coarse kind of wool, from the sheep on the heath, and of this they make carpets, stockings, gloves, and other coarse woollen goods. We have some manufactures of cloth, of which the finer sorts are really good, and not too dear; but the coarser in proportion worse and dearer.

" The women of whole districts of Schleswig are employed in making laces, a manufacture introduced by the refugees of Brabant, and which has greatly extended itself. We supply the greatest part of the northern and eastern kingdoms with laces; and a great part is sold as being from Flanders.

" Some linen is made, but only for home consumption; and it is far from being sufficient for that purpose.

" Of silk and cotton we have little. We make some stockings, ribbons, and other trifles, but not enough for our own consumption.

" Of pottery we have some good manufactures; that of porcelain at Copenhagen is well known.

" We make all that belongs to the army, guns, musquets, powder, swords. In the time of war we send part of them to foreign markets. Sugar houses for refining sugar we have many; and enough of that article for home consumption.

" Authors we have in every science, and really many excellent ones; but our country is small, and the number of our readers not great, and therefore must the number of our writers likewise be small.

" In Jurisprudence, Nourregaard.
Medicine, Cullisen, Herbolt.
Natural history, Vahl, Abildgaard, Fabricius.
History, Hayewish, Suhm lately dead.
Antiquities, Mynter.
Philosophy, Rheinholdt.
Statistics, Schlegel, Wiemann, Fabricius.
Poets, Baggesen, Guldberg, Heiberg, Rahbeck.
Painters, Juel, Hoyer, Poulsen, Myller.
Architects, Hasdorgh, Hanssen.
Engraver, Preidler."

SWEDEN.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names.—Extent.—Boundaries.—Original Population.—Progressive Geography.—Historical Epochs and Antiquities.

NAMES.] SWEDEN, in the native language Suitheod, and more modernly Sweireke, appears to be a very ancient appellation, and is said, by the northern antiquaries, to imply a country whose woods had been burnt, or destroyed. The name seems as ancient as the time of Tacitus [1], who, after describing the Suiones who lived in islands of the ocean, passes to the Sitones, and afterwards to the nations at the further end of the Baltic. It is evident that Cluverius has in this, as in other instances relative to the north of Europe, been blindly followed by D'Anville, and other geographers, who suppose that the Sitones are the Danes or Norwegians, and the Suiones the Swedes. The learned Huet [2], on the contrary, well perceived that the Suiones must be on the west; though he errs in placing them in Norway, which was almost unknown to the ancients. The Sitones must have dwelled in the southern provinces of Sweden; and the name either have been derived from Sictuna, the old name of the chief town, as appears from Adam of Bremen, or from Suitheod the native term, softened as usual by the Roman enunciation.

EXTENT.] The kingdom of Sweden is of very considerable extent; being from the most southern promontory of Scone, to the northern extremity of Swedish Lapland, not less than 1150 British miles in length; and from the Norwegian Alps to the limits of Russia about 600 *. The contents in square miles have been computed 208,912; and the inhabitants being some years ago supposed 2,977,345, there will be fourteen to the square mile, including Swedish Pomerania computed at 1440 square miles, and 103,345 inhabitants.

ORIGINAL POPULATION.] As there is no evidence that the Celts ever penetrated to Scandinavia, the first population appears to have consisted of Fins, who, perhaps seven or eight centuries before the Christian æra, were supplanted by the Goths, mythologically represented as having been conducted by Odin, or the god of war. These Goths gradually proceeded from their native seats in the north of Persia, and along the Euxine; and while one division passed to the west, or into Germany, another in a northern progress reached Scandinavia, where no foreign conquest having since

[1] German, c. 44, 45.

[2] Commerce des Anciens, ch. xlii. p. 234.

* The Swedish mile is nearly seven English, being ten and two-fifths to a degree. A Norwegian mile is equal to eight or nine English.

From Pontoppidan, and Hermelin.

Published March 1st 1802, by Cadell and Davies, Strand; and Longman and Rees, Paternoster Row.

extended, the population continues purely Gothic in the southern parts; while in the north there are remains of the Fins; and above them the Laplanders, a native diminutive race resembling the Samoieds of the north of Asia, and the Esquimaux, and Greenlanders, Arctic races of America. If any isles exist near the south pole, it is probable that the inhabitants will be found of diminished size, and manners resembling those of the northern progeny. The Laplanders are however superior to the Samoieds, or Esquimaux, because they have intermarried with the Fins, a race of greater dignity; and their language, being originally very rude and barren, as their wants and ideas were few, they have in a great measure adopted that of the Fins their neighbours.

PROGRESSIVE GEOGRAPHY.] Only the southern parts of Scandinavia being known to the ancients, its progressive geography is rather obscure. The only people there situated known to Tacitus were the Sitones. Pliny appears to have confounded the knowledge of the ancient Greeks concerning Britain and Ireland, with that of the Romans concerning the Baltic; but he expressly names Scandinavia, a part of which was inhabited by the Hilleviones, perhaps in the south of Norway, or in Holland, while his Eningia is probably the south-western shore of Gothland, which the Romans, deceived by the intervening gulph of Christiana, supposed to be another island. Ptolemy mentions five or six tribes, among which are the Gutæ of Gothland, as inhabiting the portion of Scandinavia known in his time; which, from the size he ascribes to it, could not have passed the lakes Wenner, and Weter. His four Scandinavian islands are evidently those of Zealand, Funen, Laland, and Falster. After this period there is little progress in Scandinavian geography till the time of Jornandes, in the sixth century, who describes Scanzia, or Scandinavia, at some length, and mentions various nations by whom it was inhabited. * The next notices are due to the voyages of Ohter, recited by our great Alfred; and the more certain and general knowledge begins to dawn with Adam of Bremen, and the Icelandic historians.

HISTORICAL EPOCHS.] The following seem to constitute the chief historical epochs of Sweden.

1. The early population by the Fins and Laplanders.
2. The conquest by the Goths.
3. What little knowledge the ancients possessed concerning the south of Scandinavia.
4. The fabulous and traditional history, which begins about the year of Christ 520, and includes the conquest of Sweden by Ivar Vidfatme king of Denmark about A.D. 760. Hence there is an obscure period till the reign of Biorn I., A.D. 829, commemorated, with his immediate successors, by Adam of Bremen.
5. The conquest of Denmark by Olaf II. about the year 900.
6. The reign of Ingi the pious, A.D. 1066, after which the history is sufficiently clear as the Danish is after Gormo, A.D. 920. Lagerbring, one of the best native historians, divides the ancient kings into the Ynglingian race, the most ancient in traditional report; and which terminated at the conquest by Ivar Vidfatme, who was succeeded by his grandson Harold Hildetan, and his great grandson Sigurd Ring: followed by another branch called the race of Sigurd.
7. The partial conversion of Sweden to Christianity, in the reign of Olaf III., A.D. 1000: but more than half a century elapsed before Paganism can be considered as finally abandoned, in the reign of Ingi the pious; whose father Stenkil is regarded as the founder of a new dynasty, though he sprung from the house of Sigurd. But the crown was now considered as having become elective.

* The names are corrupt, but might, like the whole of this author, be greatly improved from the Ambrosian MS., whose various readings are published by Muratori in the first vol. of his Italian historians. In a new edition that MS. should be adopted as the text, and the few various readings that are worth preservation should be given on the margin.

8. The accession of the Folkungian branch, about the middle of the 13th century.

9. The Swedes, discontented with their king Albert of Mecklenburg, in 1388 elect as their sovereign, Margaret, heiress of Denmark and Norway. Thus ended the Folkungian race; and by the celebrated treaty of Calmar, A.D. 1397, the three kingdoms of the north were supposed to be united for ever. But after the death of Margaret in 1412, the Swedes began to struggle for their liberty: and in 1449 Karl or Charles VIII. was elected king of Sweden: having assailed the property of the church, he was forced to leave the kingdom 1457, but was afterwards restored.

10. The struggles between Denmark and Sweden, till the cruel and tyrannic reign of Christiern II., king of Denmark, Norway, and Sweden.

11. Tyrants are the fathers of freedom. Gustaf Wase, whom we style Gustavus Vasa, delivers his country from the Danish yoke, after a contest which forms one of the most interesting portions of modern history. The revolt may be considered as having commenced when Gustaf appeared at Mora, in Dalecarlia, A.D. 1520, and completed three years afterwards, when he entered Stockholm in triumph. Dissatisfied with the power of the clergy, which had repeatedly subjugated the kingdom to Denmark, this great prince, 1527, introduced the Reformed religion; and died in his seventieth year, Sept. 1560, after a glorious reign of thirty-seven years.

12. The reign of Gustaf Adolph, or Gustavus Adolphus, A.D. 1611 — 1631. Austria, Spain, and the other Catholic kingdoms, having conspired to extirpate the Protestant religion in Germany, this king was invited to assist the Reformed; and carried his victorious arms to the Rhine, and the Danube. His daughter Christina, a pedant in petticoats, having formed a classical attachment to Italy, abandoned the Swedish throne, and embraced the Catholic religion, which her father had so strenuously opposed.

13. The reign of Charles XI., 1660 — 1697, when the arts and sciences began to flourish; and the power of the kingdom was carried to its utmost height. This reign of solid beneficence was followed by the calamitous sway of that madman Charles XII., whom Pope was so ill informed as to assimilate with Alexander the Great, whose conquests were conducted upon principles wholly the reverse, and were crowned by establishments directed by an enlarged mind, capable of views of eternal benefit and duration.

14. After the weak reign of Charles XIII., Sweden sunk into political humiliation; and is now regarded as little better than a province of Russia, to which disgrace the Swedish aristocracy as naturally tends as that of Poland. In a poor state, under that form of government, it is natural that the leaders should sell their country to a neighbouring power, except severely guarded as at Venice; and the Revolution under Gustaf III. 1772 must be considered as beneficial to Sweden. For the Russians, by the corruption of the aristocracy, had almost subjected the kingdom: when the sovereign, assisted by the counsels and money of France, then inimical to Russia the ally of England, accomplished his victory over the nobles. The assassination of that prince, and the subsequent events are little momentous in a general point of view; and, though more free from Russian intrigue, Sweden bends in terror before that powerful name.

ANTIQUITIES.] The ancient monuments of Sweden consist chiefly of judicial circles, and other erections of unhewn stone, followed by the monuments inscribed with Runic characters, some of which are as recent as the fifteenth century, and none of them can safely be dated more anciently than the eleventh *. Not far from Upsal is

* Maupertuis, in his journey to Lapland, describes the monument of Windso, which he says contains the most ancient inscription in the world! This stone, with a Runic inscription, seems to have been erected in the fourteenth or fifteenth century, (during which Runic inscriptions abounded even in the church-yards of Scandivania), to denote some boundary, perhaps then existing between Danish and Swedish Lapland.

the

the morasten or stone on which the king used to be enthroned, as the old Scottish monarchs were at Scone. The ancient temples, called Skior, or Skur, were of wood, and have consequently perished. Of the old churches and castles, erected since the use of stone, Dahlberg has engraved many[3]; and some of the latter are remarkable for their resemblance to what are called Pictish castles in Scotland.

[3] Suecia antiqua et hodierna.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenue. — Political Importance and Relations.

RELIGION.—ECCLESIASTIC GEOGRAPHY.] THE religion of Sweden is the Lutheran, and this kingdom has retained an archbishopric, a pre-eminence abolished in Denmark; with thirteen prelacies. The parishes amount to 2,537. The priests are computed at 1,378; with 134 vicars, and 192 prepositi, or inspectors[1]. Some of the parishes are very extensive, as that of Eastern Bothnia, which is about 150 miles in length by 48 in breadth; and another parish in Lapland is still larger. A consistory of the clergy of the diocese elects the archbishops, and the bishops, by presenting three to the king for his nomination. Some of the parishes are under the royal patronage; others in the gift of individuals: but many are called consistorial, and the priest is appointed by the votes of his brethren.

GOVERNMENT.] The revolution of 1772 pretended to restore the government to the form established by Charles XI.; and which had lapsed into a factious mixture of aristocracy. But by the act of union, 1789, the constitution became an absolute monarchy; the monarch having arrogated not only the rights of peace and war, and the administration of justice, but the imposition of taxes, without the consent of the diet, which cannot deliberate on any subject till it be proposed by the sovereign. The diet consists of nobles, and landed gentlemen, clergy, burgesses, or deputies of towns, and those of the peasantry. Each of the four states has a speaker; the archbishop of Upsal being always the speaker of the clergy, while the king nominates the others. The diet of 1786 consisted of 49 counts, 136 barons, 188 knights, 396 gentlemen, 51 ecclesiastics, 94 burgesses, and 165 deputies of the order of peasants[2]. As the monarch is not opulent, it is evident that so large and respectable a body might constitute a formidable barrier; but the evils of faction have been so great and impendent, and the Russian power and influence so destructive to the very existence of the state, that the deputies seem justly to regard the dictatorial power of the monarch as necessary for their own preservation.

POPULATION.] When the great extent of the Swedish territory is considered, the population will appear comparatively small: a circumstance arising in part from the mountainous nature of the country, and in part from the severe climate of the northern districts; Swedish Lapland being supposed not to contain more than 7000 inhabitants. Yet at present the population of the kingdom is thought to exceed 3,000,000. The nobility are so numerous as to be computed at about 2,500 families; while the peasants, the most numerous class, amount to about 2,000,000. This great number of nobility was connected with the aristocratic form of the government, which bore a semblance to that of Poland, and Hungary, the latter kingdom still remaining too aristocratic

[1] Olivarius Le Nord Litteraire, No. 12. [2] Ibid.

for

for the regular distribution of good government through all the classes of the community. The example of Poland will, it is hoped, convince these aristocracies that the transition of their power to the monarch is indispensably necessary for their own preservation *.

COLONIES.] Sweden only possesses one small colony, that in the island of St. Bartholomew in the West Indies, which was ceded to them by the French in 1785[3].

ARMY.] The Swedish army consists of national troops, and of foreign infantry, the latter being computed at about 12,000. The total amount of the army may be 48,000; and the soldiers are of distinguished valour and hardihood, and elated with the former fame of the Swedish arms. But on a late invasion of the Russian dominions they were found to be more obedient to the aristocracy, than to their sovereign.

NAVY.] So fatal were the naval operations of 1792 that the Swedish fleet, which consisted of 30 ships of the line, cannot now display above half that number. In the Baltic, which is full of low coasts and shoals, gallies of a flat construction are found more serviceable than ships of war, and of course great attention is paid to their equipment by Sweden as well as Russia.

REVENUE.] The revenue of Sweden is computed at about 1,500,000 sterling; which is equalled by the expences of the government. The national debt cannot be much less than 10,000,000 sterling, as it was augmented during the late regency; but the young monarch is anxious for its reduction. This debt being chiefly incurred at Hamburg, the country is overwhelmed with the paper money of that city; and the scarcity of gold and silver, and even of copper currency, is incredible. The ducat is the only gold coin, worth about nine shillings sterling; while the silver crown may be valued at four shillings and sixpence. The schelling, or shilling, is worth little more than one penny sterling; and the copper consists of half and quarter shillings, the ancient heavy pieces being now rarely visible, and supplanted by bank-notes, some of which are for very diminutive sums.

POLITICAL IMPORTANCE AND RELATIONS.] The political importance and relations of this kingdom are much diminished, since the glorious reign of Gustaf Adolph, and the beneficent sway of Charles XI. Prior to the late revolution in France, Sweden had remained a faithful ally of that kingdom, which excited her against any enemies in Germany, as Scotland was formerly involved in the wars between France and England. Of late this alliance seems to be sacrificed to a more useful connexion with Denmark, and Prussia, which can alone guard the north of Europe from the progress of the Russian preponderance. The disorder of the finances unites with many causes of discontent, both among the aristocracy and among the peasantry, to render the power of Sweden little apparent in the political balance of Europe.

* Olivarius computes the population in the following manner, from the enumeration made in 1784:
Nobility. Individuals from the age of 15 to 63, men 3869, women 2865, children 1904; individuals above and under those ages 8200; domestics 27,263.
Burgesses. Individuals from the age of 15 to 63, men 28,492, women 23,563, children 11,068; individuals above and under those ages 60,500; domestics 31,868.
Clergy. Individuals from the age of 15 to 63, men 5663, women 4120, children 2775; individuals above and under those ages 12,000; domestics 15,980.
Public Officers, including the military. Individuals from the age of 15 to 63, men 23,872, women 18,230, children 8823; individuals above and below those ages 48,700; domestics 41,809.
Peasants. Individuals from the age of 15 to 63, men 320,772, women 296,664, children 257,213; individuals above and below those ages 813,500; domestics 195,388.

[3] Olivarius Le Nord Litteraire, No. 12.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities.—Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the superior classes in Sweden are so much tinged with those of the French, that no striking peculiarity can be observed; and even the peasantry have so much vivacity and address, that they have been styled the French of the north. The complexion, which in the northern latitudes is generally fair, is here much diversified, being in some provinces extremely brown. The men are commonly robust, and well-formed; and the women slender and elegant. Their attachment to luxury is, in some measure, compensated by their love of hospitality. The peasants in general make their own furniture and clothes; trade and manufactures having made very little progress. The natives of the western province of Dalecarlia retain many ancient customs, and have been distinguished for their courage and probity, since the time that Gustaf Wase issued from the mines of that country to break the yoke of Denmark. The Finlanders, on the east of the Bothnic gulph, are now little distinguishable from the Swedes; and any remarkable peculiarities of manners and customs must be sought in Swedish Lapland, which has long since been described by Scheffer, whose work was translated into English, and rendered more familiar by an extract in the Spectator[1]. Danish Lapland being more remote, less known, and more recently described; an account of this singular people is given under the article of Denmark.

LANGUAGE.] The language of Sweden is a dialect of the Gothic, being a sister of the Danish, Norwegian, and Icelandic. In the two grand divisions of the Gothic, consisting of the German and Scandinavian dialects, the latter is distinguished by great brevity and force of expression. In the south of Sweden, which contains the chief mass of population, some German and French words have been adopted; while the Dalecarlian on the north-west is esteemed a peculiar dialect, perhaps only because it contains more of the ancient terms and idiom. The Finnish gradually yields to the Swedish; but the rude Laplander retains his old speech, or rather a dialect of the Finnish adopted by his ancestors. The Swedish language is sufficiently sonorous, if the pronounciation were more emphatic. The affectation of terminating names in *us*, as if they were Latin, begins gradually to expire after a ridiculous reign of two centuries.

LITERATURE.] In the antiquity of literature Sweden cannot pretend to vie with Denmark, Norway, or Iceland: the most early native chronicle, or perhaps literary composition, being not more ancient than the 14th century. In return, while the Danes seem occupied with internal policy and public regulation, the Swedes have, in modern times, borne the palm of genius in many departments of literature and philosophy. One of the most remarkable names of Sweden, prior to the reformation, was that of St. Brigit, who flourished in the middle of the 14th century, and whose pre-

[1] See also the descriptions by Maupertuis, Kalm, Coxe, Consett, &c.

tended

tended prophecies were collected with great care, and published in Latin. When the bishopswere expelled from the kingdom by Gustaf Wase, John and Olaus Magnus retired to Rome, where the one published a fabulous description of Scandinavia; while the other gave to the world a yet more fabulous history of his native country. But Swedish literature can hardly be said to have dawned till the middle of the seventeenth century, when the queen Christina, finding the country immersed in ignorance, invited Grotius, Descartes, and other celebrated men, who, though they did not reside long in the kingdom, yet sowed the seed of letters, which gradually began to prosper in the wise and beneficent reign of Charles XI. In the succeeding or last century the name of Linnæus alone might distinguish the national literature; and it is joined in natural history with those of Tilas, Wallerius, Quist, Cronstedt, Bergman, and others. In history Dalin and Lagerbring have distinguished themselves by a precision and force, which the Danes seem to sacrifice to antiquarian discussions. Sweden also boasts of native poets and orators; and the progress of the sciences is supported by the institution of numerous academies.

EDUCATION.—UNIVERSITIES.] The manner of education has, as usual, been neglected by travellers and geographers, though perhaps one of the most important branches in the whole circle of human affairs. Compared with this primary foundation, an enumeration of universities is of small consequence. That of Upsal is the most ancient and renowned, containing about 500 students; while that of Lunden presents about 300. A third is at Abo in Finland, frequented even by students from Russia; and the whole number is computed as equalling that of Upsal. There are besides twelve literary academies, most of which publish memoirs of their transactions. The library at Upsal is richly furnished with books remitted by Gustaf Adolph, when his victorious arms penetrated deeply into Germany, Sweden having thus acquired by war the first materials of her literary fame.

CITIES AND TOWNS.—STOCKHOLM.] Stockholm, the capital of Sweden, stands in a singular situation between a creek, or inlet, of the Baltic sea, and the lake Mæler. It occupies seven small rocky islands, and the scenery is truly singular and romantic. "A variety of contrasted and enchanting views is formed by numberless rocks of granite, rising boldly from the surface of the water, partly bare and craggy, partly dotted with houses or feathered with wood[2]." Somewhat resembling Venice, but with greater diversity of prospect, it requires no fortifications. Most of the houses are of stone or brick, covered with white stucco; except in the suburbs, where several are of wood painted red, as usual in the country of Sweden. This city was founded by the earl Birger, regent of the kingdom, about the middle of the thirteenth century; and in the seventeenth century the royal residence was transferred hither from Upsal. The entrance to the harbour is through a narrow streight, of somewhat difficult access, especially as there are no tides: and for four months in the year it is frozen. It is however deep, and capable of receiving a great number of vessels. The royal palace stands in a central and high situation; and there are a castle, an arsenal, and several academies. The manufactures are few, of glass, china, woollen, silk, linen, &c. By the latest accounts the population of Stockholm may be estimated at 80,000.

UPSAL.] Next in dignity is Upsal, the only archbishopric, and formerly esteemed the chief city of the kingdom; but at present the inhabitants, exclusive of the students, do not exceed 3000[3].

GOTHENBURG.] Gotheborg, or Gothenburg, in the province of West Gothland, is esteemed the second city in Sweden, having a population of 20,000, though it was only founded by Charles IX., or rather by Gustaf Adolph. Besides considerable

[2] Coxe, iv. 33. [3] Ib. ix. 175.

commerce, the herring fishery contributes to enrich Gothenburg[4]. The streets are uniform; and the circumference is computed at near three miles: but the fortifications are so weak that in 1788 it must have fallen into the hands of the Danes, had it not been for the interference of foreign powers.

CARLSKRONA.] Carlskrona was founded by Charles XI. in 1680. This city, and Stralsund, in Swedish Pomerania, are supposed each to contain about 11,000 inhabitants. Abo, in Finland, is computed at 8,750; in which number it is nearly rivalled by Nordkioping. Fahlun is the next in population; and is followed by Wismar, another town possessed by Sweden, on the northern shore of Germany. None of the other towns contain more than 4000 inhabitants.

EDIFICES.] Even including the royal palaces, Sweden cannot boast of many splendid edifices. The roads are in general far superior to those of Denmark and Norway, which seem unaccountably neglected, good roads being the very stamina of national improvement. Yet the internal communication, even in Sweden, is impeded by bad arrangements[5].

INLAND NAVIGATION.] Of late a laudable attention has been paid to inland navigation; and the chief effort has been to form a canal between Stockholm and Gothenburg. In this canal, styled that of Trolhata, conducted along the river Gotha, stupendous excavations have been made through the granitic rocks, in order to avoid cataracts; one of which, of more than 60 feet, is called the Infernal Fall. Yet the plans have repeatedly failed, from the ignorance of the engineers; and the first expence ought to have been to procure a superintendant of real skill from England. The intention was to conduct an inland route from the Meler lake to that of Hielmer, and thence to that of Wener; and by the river Gotha, an outlet of the latter, to the Skagger Rack and German Sea. This grand design is already in some measure completed; and in the year 1800 the rivers and old canals of Finland were ordered to be cleared; but in that region the ice affords the easiest mode of communication *.

MANUFACTURES AND COMMERCE.] The Swedish manufactures are far from being numerous, consisting chiefly of those of iron and steel; with cloths, hats, watches, and sail cloth. The manufactures of copper and brass, and the construction of ships, also occupy many hands. In 1785 it was computed that 14,000 were employed in those of wool, silk, and cotton. Of native products exported, iron is the most considerable; and it is said that the miners in the kingdom are about 25,600.

The commerce of Sweden rests chiefly on the export of their native products, iron, timber, pitch, tar, hemp, and copper. Herrings also form a considerable article. Part is also transferred to other nations of the goods imported by Swedish merchants, from the isle of St. Bartholomew in the West Indies, and from China. The chief import is corn of various kinds, particularly rye, Sweden rarely affording a sufficiency for her own consumption; with hemp, tobacco, sugar, coffee, drugs, silk, wines, &c. Mr. Coxe has published a table of the Swedish commerce, whence it appears that the exports then amounted to 1,368,830l. 13s. 5d., and the imports to 1,008,392l. 12s. 4½d., so that the balance in favour of Sweden was about 360,000l.

[4] Coxe, iv. 323.

[5] Olivarius Le Nord. Lit. No. 12.

* The noble canal of Trolhata is now completed with prodigious labour and expence. A beautiful print has been published of the manner of conducting the operations through the prodigious rocks of granite. In 1801 there passed through this canal thirteen hundred and eighty ships of different sizes, laden with iron, steel, timber, herrings, grain, flour, &c. *Journal des Mines*, No. lxv. p. 404.

CHAP-

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE different parts of Sweden present considerable varieties of temperature, but even in the middle regions winter maintains a long and dreary sway. The gulf of Bothnia becomes one field of ice; and travellers pass on it from Finland by the isles of Aland. In the most southern provinces, where the grand mass of the population is centered, the climate may be compared to that of Scotland, which lies under the same parallel; but the western gales from the Atlantic, which deluge the Scotish Highlands with perpetual rain, and form the chief obstacle to improvement, are little felt. In the north the summer is hot, by the reflexion of the numerous mountains, and the extreme length of the days; for at Tornea, in West Bothnia *, the sun is for some weeks visible at midnight; and the winter in return presents many weeks of complete darkness. Yet these long nights are somewhat relieved by the light of the moon, by the reflexion of the snow, and by the Aurora Borealis, or northern lights, which dart their ruddy rays through the sky, with an almost constant effulgence. Of late years it has been remarked that the spring is more cold than formerly; yet at Stockholm the tulips blow at Whitsunday. Beyond Geffle fruit trees are rare. In a further latitude the beech disappears; and the oak dwindles, till it is followed by the birch, a tree which seems the most capable of bearing cold.

FACE OF THE COUNTRY, &c.] No country can be diversified in a more picturesque manner, with extensive lakes, large transparent rivers, winding streams, wild cataracts, gloomy forests, verdant vales, stupendous rocks, and cultivated fields. The soil is not the most propitious; but agriculture is conducted with skill and industry, so as much to exceed that of Germany, and Denmark. Even Finland presents many rich pastures, and not a few fields of rye, oats, and barley. It is supposed that in the south of Sweden, by draining and other improvements, a sufficient quantity of wheat might be raised for the supply of the kingdom.

RIVERS.] Sweden is intersected by numerous rivers, the largest of which are in the native language called Elbs, or Elfs. The most considerable flow from the lakes, without any great length of course; such as the Gotha, the only outlet of the vast lake of Wener, but unhappily impeded by many rocks and cataracts. Many other rivers in the south rather assume the form of creeks, and outlets of the lakes, as the Motala, which is the outlet of the lake Weter passing by Norkioping: and scarcely can a stream be named of considerable course, till we reach the river Dahl, the most important in Sweden, consisting of two conjunct streams, the eastern and western Dahl, which rise in the Norwegian Alps, give name to the province of Dalarn, or Dalecarlia;

* Tornea is not in Lapland, but in West Bothnia, which forms an angle far to the north (see the map,) and is inhabited by Fins.

and

and after a course of about 260 British miles enter the Bothnic gulph, about 10 miles to the east of Geffle, presenting, not far from its mouth, a celebrated cataract, esteemed little inferior to that of the Rhine at Schaffhausen, the breadth of the river being near a quarter of a mile, and the perpendicular height of the fall between 30 and 40 feet[1]. The surrounding scenery also assists the effect, which is truly sublime.

Further to the north, and in Swedish Lapland, are many considerable rivers, which also rise from the Norwegian Alps, and flow into the gulf of Bothnia, after circuits of about 200 miles. But the Tornea belongs to Bothnia Proper: it springs from a lake of the same name; and after receiving the Kengis, and other considerable rivers, joins the northern extremity of the Bothnic gulf, having run about 300 British miles.

Finland is sprinkled with numerous lakes, which give rise to considerable streams, but of a short course, as the Ulea; the Cano which passes by Biormborg; and the Kymmen flowing into the centre of the gulph of Finland.

LAKES.] Few countries can rival Sweden in the extent and number of lakes, which appear in almost every province. Of these the most important is the Wener, which is about 100 British miles in length, by 50 or 60 in breadth, in great part surrounded with forests and rocks of red granite. It receives 24 rivers, abounds with fish, and contains many romantic isles.

WETER.] Next is the Weter, a lake of equal length but inferior in breadth, which seldom exceeds 20 miles. This lake being surrounded with mountains is particularly subject to storms in the stillest weather, whence arise many popular tales and superstitions: it contains two remarkable islands; and on the shores are found agates, carnelians, and touch-stones, or pieces of fine basaltes[2]. The Weter is clear though deep; and while it receives about 40 small rivers, has no outlet except the Motala. On its eastern shore stands the little town of Wadstena, remarkable for a convent in which was preserved the body of the Swedish Brigit*.

MELER.] The lake Meler, at the conflux of which with the Baltic is founded the city of Stockholm, is about sixty British miles in length, by eighteen in breadth, and is sprinkled with picturesque isles. To the south-west is the lake of Hielmar, more remarkable for its proposed utility in the inland navigation, than for its extent.

Many other lakes are found in the north of Sweden, among which the most considerable is that of Stor, in the province of Jemtia. The chief lake of Lapland is that of Enara, in the furthest north, about seventy British miles in length by thirty at its greatest breadth. After this may be named those of Hernasba Staer, or the great lake, Tornea, and others. The lake and mountain of Niemi, and the river Tengilo, which falls into the Tornea, have been celebrated by Maupertuis for their picturesque beauty.

SAIMA.] The most considerable lake in Finland is that of Pejend, or Pajana, about 80 miles in length, by 15 in breadth, and which gives source to the river Kymmen. The lake of Saima to the east is yet more considerable; but it is chiefly within the Russian dominions: this lake may perhaps, with its various creeks and communications, be estimated at 160 British miles in length, by 25 at its greatest breadth; and flows into the Ladoga, by the great and noisy current of Woxen, which forms a vast cataract about a mile from its mouth[3].

MOUNTAINS.] Sweden may be in general regarded as a mountainous country; in which respect it is strongly contrasted with Denmark Proper, or Jutland and the

[1] Wraxall's Northern Tour, p. 158. Coxe, v. 99.
[2] Busching, i. 549.
* The curious diary of this convent, which consisted of monks and nuns, was published by the learned Benzelius at Upsal, 1721, 4to.
[3] Busching, i. 674.

isles.

isles. The chief mountains are in that elevated chain which divides Sweden and Swedish Lapland from Norway; from which successive branches run in a south-east direction. The mountain of Swucku is supposed to be one of the highest of this chain, and is of a compact slaty freestone; but on the west there are masses of a different nature; and where it inclines to the lake of Fæmund, there are apertures from two to four fathom in width, and of an equal depth, but extending in length from two to three hundred Swedish ells[4]. Bergman also mentions the high mountain of Mossevola, near the same lake, as being formed of a pudding-stone, consisting of balls of grit with a few of hornblend and limestone, united by a sandy cement[5]. The mountain of Rættvik he says is calcareous, and he estimates its height at 6000 feet above the sea, observing, as a singularity, that upon this mountain and that of Rodaberg, are found vast blocks of reddish felspar, mingled with quartz and brown mica*. There also occur, on the mountain of Osmund, enormous fragments of transparent felspar, mingled with quartz and mica; though we must proceed to the high mountains of Norway to find summits more elevated than this last. Orology, or an exact account of mountains, was little studied when Bergman published this work about 1770; but it would appear that the granitic ridge of the chain is in Norway; while the flanks, consisting as usual of limestone, pudding-stone, and free-stone, verge into Sweden. The centre of the chain seems, as in the Alps and Pyrenees, to present the chief elevations, whence the mountains decline in height towards Lapland. Those of Finland often contain rapakivi, being a brown mixture of felspar and mica[6]. In the centre and south of Sweden the red granite becomes very common. But in Westrogothia the mountains are often of trap.

Further illustrations of the grand chain of mountains, which divide Sweden from Norway, will be found in the description of the Danish dominions; and in considering the Swedish mineralogy other hints will arise concerning the geology of the country.

Forests.] The forests of this kingdom are numerous, and without their aid the mines could not be wrought. Dalecarlia, in particular, abounds with forests of birch, popular, mountain ash, pine, and fir; and the numerous lakes of Sweden are generally skirted with wood to the margin of the water.

Botany.] Athough the great Scandinavian peninsula be divided by its political interests between Denmark, Sweden, and Russia, yet nature refuses to acknowledge any such distinction; it shall therefore be considered with respect to its botany as one great whole, nor can a sketch of its indigenous plants be introduced anywhere with more propriety than in the description of that territorial part of it which, in extent, is superior to all the rest, and which reckons amongst its citizens the illustrious Linnæus, and several of his most eminent disciples†.

The lowlands and lakes of Scandinavia are principally situated in the south of Sweden and Finland, and the great ranges of Alpine mountains are found near the Arctic circle, or at least are confined to the northen provinces; hence it is that Lapland, both from its elevation and its northern site, contains several plants which are not to be met with in the rest of the peninsula.

Several species are common both to England and Scandinavia, and though the flora of Britain be the most copious of the two, yet the superiority is not perhaps so great as might be expected from the difference of climate. If those species that are natives of our chalk hills, and southern coasts, are for the most part wanting to Scandinavia, yet

[4] Bergman's Phy. Geog. in the Journal des Mines, No. xvi.: in the French translation Bergman computes the height of Swucku at 2,268 Swedish ells, that is, about 4500 feet. Ib. p. 65.

[5] Ib. No. xv. p. 64.

* Ib. No. xvi. p. 65.

[6] Bergman, 72. Kirwan, i. 345.

† Linnæus, Flora Suecica, and Flora Lapponica.—Grumerus, Flora Norwegica.

this last contains several German and Arctic plants which are not to be found in our own island.

Of timber trees there are but few species; the most common, and those which constitute the wealth of Scandinavia, are the Norway pine, and the fir: of these there are immense forests spread over the rocky mountains, and deepening with their sullen hue the whole horizon; thousands of giant growth are every winter overthrown by the storms, and allowed to perish where they fall from the impossibility of transporting them to the sea, others, in more accessible situations, are converted to various human uses; the wood from its lightness and straightness is excellent for masts and yards, and various domestic purposes; the juice, as tar, turpentine, and pitch, is almost of equal value with the wood; and the inner bark, mixed with rye-meal, furnishes a coarse bread in times of scarcity. The *bird cherry*; the *white beam*; the *mountain ash*; the *alder*; the *birch*; and *dwarf birch*; several kinds of *willow*; and the *aspen*, are found in the whole peninsula; the lime, the elm, the ash, and the oak, though growing with freedom in the southern parts, are incapable of withstanding the rigours of a Lapland winter. Among the larger shrubs the *German tamarisk*, the *guelder rose*, and the *barberry*, are met with chiefly in the south; the *burnet rose*, the *gale*, the *raspberry*, and *juniper*, are hardy enough to flourish even within the Arctic circle. The lower woods and thickets afford the *Linnæa borealis*, and *Trientalis Europæa*, in great abundance, and here and there are found the *everlasting pea*, the *narrow-leaved willow herb*, the *mezereon*, the *hepatica*, and the *cornus Suecica*. The fir woods yield two species of pyrola, the *rotundifolia*, and *minor*; and the shady sides of mountains and alpine lakes are adorned by the *cerastium alpinum*, *serratula*, *alpina*, *tussilago frigida*, and the splendid *pedicularis sceptrum*.

The dry rough tracts on the sides of the mountains are covered with the *common* and *fine-leaved heath*; the *bearberry*, distinguished by its scarlet clusters; the *Iceland* and *rein-deer lichen*, the one an article of food to the inhabitants, the other the chief support of the animal whose name it bears; *dryas octopetala*, mountain avens, *vaccinium vitis-idæa*, *rubus saxatilis*, *rhodiola rosea*, and *saxifraga cotyledon*, pyramidal saxifrage. The bleak summits where even the heath cannot root itself are clothed with the beautiful *azalea procumbens*, *androsace septentrionalis*, *andromeda hypnoides*, and *ranunculus glacialis*; with the *arbutus alpina*, and *saxifraga nivalis*. The mountain pastures consist for the most part of the viviparous grasses, mixed with *phaca alpina*, *astragalus alpinus*, *arnica montana*, *gentiana purpurea*, and *nivalis*, *alchemilla alpina*, *veronica alpina*, and *polygonum viviparum*.

The moist spungy alpine rocks, and the sides of the torrents afford the *cloudberry*, one of the most plentiful and grateful of the Scandinavian fruits; several kinds of saxifrage, and dwarf willows. The wet and boggy pastures yield, for the most part, a coarse grass mixed with *cotton rush*, with *narthecium ossifragum*, *pedicularis flammea*, *saxifraga hirculus*, and cranberry, the fruit of which grows to a larger size than that of the same species in the English mosses.

The plants which grow in the lakes and pools, covered as they are with ice nearly half the year, are not very numerous; the most important are the *white* and *yellow water-lilly*, *calla palustris*, *lobelia dortmanna*, *menyanthes trifoliata*, and *nymphoides*, buck-bean, and fringed water-lily.

The plants of Lapland may be divided into those which are common to this and to more southern countries, and those which are scarcely ever met with beyond the limits of the Arctic circle. Among the former may be particularized *azalea procumbens*, *saxifraga cernua*, and *rhodiola rosea*, all growing in immense abundance on the highest mountains; *red currant*, *whortleberry*, *cloudberry*, *stone bramble*, the berries of all which are gathered in great quantities and preserved under the snow till winter, at

which time, mixed with rein-deer's milk, they form an agreeable variety in the food of the inhabitants: the moist woods are perfumed during the short summer by the *lily of the valley*, and *ledum palustre*.

The vegetables peculiar to Lapland, and which grow either on the highest mountains or on the shore of the northern ocean, are *diapensia lapponica*, *andromeda cærulea* and *tetragona*, *rubus arcticus*, *ranunculus lapponicus* and *hyperboreus*, *pedicularis lapponica*, *gnaphalium alpinum*, *salix lapponum*, *orchis hyperborea*, *pinguicula alpina*, and *azalea lapponica*.

Zoology.] The Swedish horses are commonly small but spirited; and are preserved, by lying without litter, from some of the numerous diseases to which this noble animal is subject. The cattle and sheep do not seem to present any thing remarkable. Among the wild animals may be named the bear, the lynx, the wolf, the beaver, the otter, the glutton, the flying squirrel, &c. The rein-deer of Lapland is briefly described in the account of the Danish monarchy. Sweden also presents one or two singular kinds of falcons, and an infinite variety of game; among which may be named the kader, or chader, in Scotland called the cock of the forest, being as large as a common turkey, and of a black colour, while the hen is orange, and far inferior in size. The ora is rather larger than our black game. The hierpe is esteemed the most delicate, about the size of a young pigeon, diversified with black, grey, and white. The snoripa makes an extraordinary noise, particularly in the night[9]. The rana bombina, and the coluber chersea, are considered as almost peculiar to Sweden.

Mineralogy.] Of modern mineralogy Sweden may perhaps be pronounced the parent country; and her authors, Wallerius, Cronstedt, and Bergman, (not to mention the great Linnæus, who confesses that he had no predilection for this study, perhaps because it was undeterminable by forms and members, upon which his zoology and botany rest,) have laid the first solid foundations of the science. It would therefore be a kind of literary ingratitude not to bestow due attention on Swedish mineralogy. First in dignity, though not in profit, are the gold mines of Adelfors in the province of Smoland. The rock is chiefly a slaty hornblend, in vertical banks, black, deep brown, red, or greenish, sometimes soft like lapis ollaris, sometimes very hard. The veins are generally of quartz, of a dark colour; the direction of the most productive being from N. to S. varying in thickness from two inches to near a fathom[10]. The gold is sometimes native; and sometimes combined with sulphur. Some ores of copper are also found in the vein, which likewise presents white calcareous spar, red zeolites, small red or green fragments of petrosilex, with galena and iron. But these mines seem to be nearly exhausted*. In the production of silver Sweden yields greatly to Norway; yet the mine of Sala, or Salberg, about 30 British miles west of Upsal, maintains some reputation. It is situated in a country rather flat; and towards Norberg the region of the mines is divided, from a mass of petrosilex, by fissures filled with earth, and little fragments of steatite. The silver is in limestone; which, however, when it is large grained and free from mixture, contains no mineral, and is styled ignoble rock: it is on the contrary metalliferous when fine grained, and mingled with mica[11]. There are about 100 veins, greater or smaller; and the gangart† is of steatite,

[9] Consett, p. 71, &c. The *motacilla Suecica* is a beautiful bird, which is said to exceed even the nightingale in song; it is of a sky-blue colour, with two lines about the throat, one black, and the other of a rusty hue.

[10] Bergman Phy. Geog. ut supra, p. 49.

* Gold is also found in hornblend, at Basna near Ryddarhytte. Bergman Phy. Geog. 24.

[11] Bergman Phy. Geog. ut supra, p. 53.

† This word, adopted from the German, signifies what was formerly styled the matrix, a term abandoned, because it implied that the mineral was produced by the substance in which it was found.

steatite, talc, amianthus, asbestos, hornblend, calcareous spar, and sometimes quartz and beautiful petrosilex. The silver is rarely found native, but is procured from the galena or lead ore. Silver has also been found in Swedish Lapland.

The chief copper mines of Sweden are in the province of Dalecarlia. On the east of the town of Falun is a great copper mine, supposed to have been worked for near 1000 years [12]. The metal is not found in veins, but in large masses; and the mouth of the mine presents an immense chasm, nearly three quarters of an English mile in circumference, the perpendicular depth being about 1020 feet. About 1200 miners are employed. Copper is also worked in Jemtland; and at Ryddarhytte is found iron. Nor is Sweden deficient in lead: but iron forms the principal product, and the mine of Danamora is particularly celebrated for the superiority of the metal, which in England is called Oregrund iron, because it is exported from Oregrund an adjacent port, where the Bothnic gulph joins the Baltic. The mines of Danamora have no galleries, but are worked in the open air by means of deep excavations [13]. The ore is in a limestone rock, and occupies about 300 persons in twelve pits. This valuable mine was discovered in 1488. Bergman describes the iron mine of Taberg, in Smoland, as consisting of beds of ore, of a blackish brown, separated by beds of mould without any stone [14]. This enormous mineral pile is rivalled by an entire mountain of iron ore near Tornea in Bothnia; and at Luleo the mountain of Gellivar forms a mass of rich iron ore, of a blackish blue, extending like an irregular vein, for more than a mile, and in thickness from 300 to 400 fathoms *. Cobalt is found at Basna, and zinc at Danamora; while the mines of Sala present native antimony; and molybdena appears at Norberg. Coal has been recently discovered in the province of Scone.

Sweden abounds with beautiful granite; but in marble yields to Norway, though that of the isle of Gothland be celebrated, as well as its sand-stone used for build-

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Our mineralogic terms are not yet strictly precise. Veins of metal are commonly accompanied or incorporated with quartz, and various other substances, called the *gangart*. They are also often divided from the rock itself by thin layers called the *salbands*. In an accurate description of a mine therefore, it is necessary to distinguish with precision the *rock* of the mountain, the *salbands*, and the *gangart*, which may all be very different substances.

The gold of Adelfors is sometimes native, and sometimes in the form of pyrites, with a gangart of quartz or hornblend. See Davila's Catalogue.

[12] Coxe, v. 94.

[13] Coxe, v. 103. According to Jars, i. 120. the rocks of Danamora are granite, in which is found a kind of petrosilex, veined with different colours, probably a felsite, or compact felspar. The mineral however does not touch the granite, but is contained in a bluish rock, as most of the other minerals of Sweden. He informs us, vol. ii. that the mine of Adelfors was discovered in 1737. The native gold is in quartz, hornstone, or rather hornblend, and limestone. That of Fahlund in gneiss, Jars, iii. 34, which often passes to *hornberg*, or a tortuous and confused micaceous schistus.

[14] Bergman ut supra, p. 58.

* In another passage, p. 23. Bergman observes that the two mountains of Kerunawara, and Lousowara, in Pitea Lapland, only divided by a little valley, are wholly composed of iron ore.

In the *Voyage de deux François*, by M. Fortia, Paris, 1796, five volumes, 8vo. the account of Sweden, which forms the second volume, is excellent. He informs us, p. 31. that the copper mines of Ridaor Hyttan, in Westmanland, near Alboga, also present iron, galena, bismuth, with petrosilex, red stalstein, fluor, and lapis olaris. The iron mines of Taberg present amianthus mixed with iron, pyrites and mica. Salberg yields silver, galena, antimony, and the noted petrosilex of Wallerius, which is compact felspar, sometimes with nodules of actinote. Norberg presents iron in quartz, with red felspar in hexagon layers, sprinkled with quartz. Danamora, amidst abundance of iron, presents also amianthus, mountain cork, calcareous spar, amethyst, smoky crystal, garnet rock, mineral pitch, and martial pyrites, with petrosilex of several colours, sometimes in bands. This last is the *saxum Danemorense* of some mineralogists.

The noted quarries of porphyry were first worked in 1786. The stone is black, grey, red, or brown; and spots white, red, or green. They are at Elfdal near Mora.

The same author informs us, v. 12. that the best iron mines of Russia are at Dougna, not far from Smolensk.

ing at Stockholm. Porphyry also appears in the mountain of Swuku, and many other parts. At present, when precious stones are radically distinguished from coloured crystals, it would perhaps be difficult to discover any of the former in Sweden. Bergman celebrates the rock crystals of Offerdals in Jemptland, found in cavities of white quartz, which runs in veins through a rock of lapis ollaris [15]; but he passes in silence any other Swedish production of this kind, nor does the industrious Wallerius supply this defect, and he only adds coarse garnets of various colours.*

MINERAL WATERS.] The most renowned mineral waters in Sweden, are those of Medewi in eastern Gothland.

NATURAL CURIOSITIES.] Sweden and Swedish Lapland abound with natural curiosities, of various descriptions. Some of the lakes and cataracts have been already mentioned; and it would be vain to attempt to describe the many singular and sublime scenes, which occur in so variegated and extensive a country.

In a lake called Rolangen, in the district of Marback in Smaland, there is a small island called Rodholm, which at certain periods rises up from the bottom of the water. Its area is about 9600 square feet. Since the year 1696 this island has emerged and been visible in 1712, 1719, 1723, 1726, 1733, 1743, 1747, 1750, 1757, 1758, 1766, 1773, 1779, 1783, and 1790. The shortest time of its being visible was in 1743, when it remained afloat three days. The longest was in 1783, when it emerged on the 10th of August, and sunk down on the 6th of November, during a strong wind from the north. On the second of September 1773 Gustavus III., who was then in the neighbourhood, had an opportunity of seeing this singular phenomenon.†

SWEDISH ISLANDS.

SWEDEN possesses many islands, scattered in the Baltic Sea and gulph of Bothnia. On the east is the isle of Bornholm, an ancient appanage of Denmark, yielded to Sweden in 1658, but soon after restored to Denmark by the wish of the inhabitants, though it be often erroneously described in the maps as belonging to Sweden. Further to the north is the long island of Oland, or Œland, in length about seventy miles, in breadth about six. In the north are many fine forests, while the southern part is more level and fertile. The horses are small but strong, and the forests abound with deer, nor is the wild boar unknown. Freestone, alum, and touchstone are products of Œland; and the inhabitants are computed at near 8000. Next occurs the island of

[15] Journal des Mines, ib. 35.

* The stone called *rapakivi* is from Rapakivi, two miles to the north of Uleaborg. It is of felspar and mica, of a brown colour and apt to moulder.

The *binda* of the Swedes is a mixture of quartz and hornblende, or hornblende and felspar; the *grunbinda* consists of green hornblende with mica. The *grunstien* of the Swedes, which is a kind of *binda*, is a shivery and soft mixture of quartz, mica, and horblende. Gallitzin *Recueil des Noms*, &c. Brunswick, 1801, 4to.

The *hornberg* of Cronstedt, and other Swedish mineralogists, is an irregular, knotty, and hard kind of micaceous schistus. See the observations of Andrada on the mines of Sala, in the *Journal des Mines*, No. 88. The mines of Sala contain iron, lead, silver, antimony, &c. with asbestos, quartz, garnets, &c. disposed in beds of primitive limestone, while the surrounding mountains are granitic.

† There is a similar island in one of the lakes of Cumberland. See the *Athenæum*.

Gothland, known to the literary world by the travels of Linnæus, about seventy miles in length, and twenty-four in breadth; a fertile district remarkable for an excellent breed of sheep. It was subject to the Danes for near two centuries, till 1645, when it was restored to Sweden. The isles of Aland mark the entrance of the Bothnic gulph, deriving their name from the largest, which is about forty miles in length, and fifteen in breadth, containing about 9000 inhabitants, who speak the Swedish language, though included in the government of Finland. These isles form as it were a barrier of rocks of red granite, stretching to the opposite shores. They are now considered as belonging to Russia, to which they have passed with Finland.

PORTUGAL.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

NAMES.] THE name of Portugal is of recent origin. In the Roman period there was a town called *Calle*, now Oporto, near the mouth of the river Douro, and this haven being eminently distinguished, the barbarism of the middle ages conferred on the circumjacent region the name *Porto Calle*; which, as the country was gradually recovered from the Moors, was yet more improperly extended to the whole kingdom [1]. The ancient name of this country was Lusitania; but the boundaries do not exactly correspond.

EXTENT.] Portugal extends about 360 British miles in length, by 120 in breadth; and is supposed to contain about 27,280 square miles, which with a population of 1,838,879 will yield 67 inhabitants to the mile square [2]. The extent and population thus approach nearly to those of Scotland: but by some accounts the population of Portugal may exceed the calculation here followed by nearly half a million.

ORIGINAL POPULATION.] The original population of Portugal may be traced in that of Spain, and has undergone the same revolutions. Those who are desirous to enquire farther into the subject may consult the learned work of the Portuguese antiquary [3].

PROGRESSIVE GEOGRAPHY.] The progressive geography of Portugal is also included in that of Spain, till the eleventh century, when it began to form a separate state. The kings of Castille had recovered a small part of this country from the Moors about the year 1050: and the conquest was gradually extended from the north till about the middle of the thirteenth century, when the acquisition of Algarve completed the present boundaries of Portugal.

HISTORICAL EPOCHS.] The historical epochs of so recent a state cannot be numerous; nor is it necessary to recur to those ancient events, which more properly belong to the general history of Spain.

[1] D'Anville Etats formes en Europe, &c. p. 192.

[2] Boetticher's Tables, p. 46. Concerning this country, the author was favoured with some manuscript observations by a Portuguese eminently skilled in the statistics of his country, and which shall be inserted in the notes. It is computed that Portugal contains 2,740 Portuguese leagues, of 17 to the degree.

[3] Resendii Antiquitates Lusitaniæ. Col. Agrip. 1600, 12mo.

1. The kings of Asturias subdue some of the Moorish chiefs of the north of Portugal; and Alphonso the great establishes episcopal sees in the part between the Minho and Douro. In 1054 Ferdinand king of Castille extends his conquest to Coimbra; and on sharing his dominions among his sons, Don Garcia, along with Galicia, had a part of Portugal, whence he is styled on his tomb, A.D. 1090, *Rex Portugalliæ et Galleciæ* [4].

2. Alphonso VI., brother of Garcia, and king of Castille, having favourably admitted several French princes to his court, among them was Henry, whom he nominated count of Portugal, adding his natural daughter Theresa in marriage. The most exact French writers assert, from the chronicle of Fleuri, that this Henry was the grandson of Robert duke of Burgundy, son of Robert king of France; and deserve more credit than the Spanish, who derive him from the house of Lorrain, through a relation of Godfrey of Boulogne, the hero of Jerusalem; a manifest error, as Godfrey of Boulogne, though he held the duchy of Lorrain, was not of the house of Lorrain. However this be, Henry appears as Count of Portugal in 1094 or 1095: signalized himself by many victories over the Moors, and died in 1112, leaving a son Alphonso the first. In the year 1139 Alphonso gains an illustrious victory over five Moorish princes, and is acclaimed king by his troops upon the field of battle. In 1148 he seizes Lisbon by the assistance of a fleet of Cruzaders going to the Holy Land. Alphonso died in the year 1185, aged upwards of ninety. Such are the foundations of the Portuguese monarchy.

3. Alphonso III., about the year 1254, completes the conquest of Algarve. Portugal continued to be fortunate in a succession of great princes; but the wars against the Moors were unhappily followed by those against the kings of Castille, which have implanted such a deep hatred between the nations.

4. Portugal was to attract the admiration of Europe by her commercial discoveries. In 1415 John the great, king of Portugal, carrying his arms into Africa, and taking the city of Ceuta, an impulse was given to the national spirit; and in 1420 we find the Portuguese in possession of Madeira. Emulation also contributed, for in 1402 Jean de Bethencourt, chamberlain of Charles VI. of France, had taken possession of the Canaries, and afterwards assumed the title of king of those islands [5]. The Portuguese discoveries in Africa proceeded under John's successors, Edward, and Alphonso V., and the auspices of Prince Henry, till, in the reign of John II., they extended to the cape of Good Hope: and in that of Emanuel, Vasco de Gama opened the East Indies.

5. John III. admits the inquisition, A.D. 1526; since which event the Portuguese monarchy has rapidly declined.

6. Sebastian king of Portugal leads a powerful army on an idle expedition into Africa, and is slain in battle. He is succeeded by his uncle Cardinal Henry; who dying two years afterwards, Portugal was seized by Philip II. king of Spain, 1580.

7. The revolution of 1640, which placed the house of Braganza on the throne of Portugal. John IV. was a descendant of the ancient royal family by the female line. Little of consequence has since arisen, except the earthquake at Lisbon in 1755, the celebrated administration of Pombal, and the recent intermarriages with Spain, which promise, at no remote period, to unite the kingdoms. The recent peace with Spain seems to have been procured by humiliating concessions.

ANTIQUITIES.] The antiquities of Portugal consist chiefly of Roman monuments, with a few Moorish remains. In the furthest north is an extensive series of arches, formerly a Roman aqueduct [6]. At Evora are well preserved ruins of a temple of Diana,

[4] D'Anville, 194.
[5] See the history written at the time by his chaplains, published at Paris, 1630, 8vo.
[6] Murphy's Travels.

and

and an aqueduct ascribed to the celebrated Quintius Sertorius, whose life is delineated by Plutarch *. Among the antiquities of the middle ages may be named the noble monastery of Batalha, in Portuguese Estremadura, about 60 miles to the north of Lisbon, founded by John I., at the close of the fourteenth century, in consequence of the great victory over the king of Castille, one of the most noble monuments of what is called the Gothic style of architecture [7].

* At Chaves is a Roman bridge, erected in the time of Trajan, and still entire.
[7] See the minute description by Murphy.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE religion of Portugal is the Roman Catholic; and a strict observance of its duties forms one of the national characteristics, the men vying with the women in attention to their repeated daily devotions. There are two archbishoprics, and ten episcopal sees: and there is besides a patriarch, but he does not seem to possess extraordinary powers. The number of parishes approaches four thousand[1]; while in Scotland, a country of similar extent, they do not reach one thousand: but the catholic religion affords supplies for a far greater number of priests than the protestant.

GOVERNMENT.—LAWS.] The constitution of Portugal is a monarchy, absolute and hereditary; yet in case of the king's demise without male issue, he is succeeded by his next brother, whose sons have however no right to the throne till confirmed by the states[2]. The chief articles of the constitution are contained in the statutes of Lamego, issued by Alphonso I. in 1145*. The king's titles are numerous: that of the heir apparent is prince of Brazil; his eldest son prince of Beira. The laws† have few particularities: they are lenient in cases of theft, which must be repeated four times

[1] Murphy's State of Portugal, p. 10.

The title of patriarch of Lisbon is only given by brevet to the archbishop of Lisbon, and he has no special jurisdiction. The inquisition still struggles for power, and takes every advantage for its own profit: nor is there much hope of a change. The church at present contains two archbishoprics in Europe, and three in the colonies; fourteen bishoprics in Europe, and sixteen in the colonies. The convents of men in Europe are 417, and of women about 150. The secular clergy about 22,000, monks 14,000, nuns 10,000, all in Europe. The papal jurisdiction has been somewhat diminished since 1770, but the influence is still very great. MS. Notes.

[2] Ib. 109, from the Portuguese writers.

The prince of Brazil was appointed regent by his mother, the heiress of the kingdom. Don Pedro, his father, was king as husband of Maria, or according to the Scotish expression, had the crown matrimonial, but was not regarded as sovereign. MS. Notes.

The administration lies with four ministers and secretaries of state; one is president of the treasury, or at the head of the finances; another minister of the interior; another of war, and foreign affairs; the fourth of the marine and the colonies. In 1796 a council of state was nominated by the prince, consisting of thirteen members, including the four ministers, but it is only assembled on solemn occasions. The chancellor is a subordinate officer, and does not administer justice. The chief of the court, called Relaçaõ, somewhat resembling the parliament of Paris, is called Regent of the Justices, but the other high courts do not depend on him. There are five royal councils which judge without appeal; two for Europe at Lisbon and Oporto; two for Brazil at Bahia and Rio Janeiro; one for Asia at Goa. By an edict of the 4th August 1769, no law has positive authority, except the ordinances of the kings; but the Roman law may be consulted as *written equity*. MS. Notes.

* Some doubt their authenticity.

† "There are laws in plenty, and good ones. – No country has had more labour bestowed upon its jurisprudence; but in latter times there was no justice administered, and any crime, however vicious, might be committed with perfect impunity." (Note communicated.)

before death be the punishment. An adultress is condemned to the flames: but this, like other laws too severe for the offence, is never put in execution *.

POPULATION.] Portugal is divided into six provinces. 1. Entre Douro e Minho. 2. Tras-os-Montes. 3. Beira. 4. Estremadura. 5. Alentejo. 6. Algarve. The two first being on the north of the kingdom the next two in the middle, the two last in the south. The first province derives its name from its situation, between the rivers Douro and Minho, and is very populous and fertile. The second is mountainous, as the name imports; but there are vales which contain vineyards, and other cultivated lands. Beira is a large and fertile province; and is rivalled in soil by Estremadura, which, like the Spanish province of the same name, is said to derive its etymon from having been extreme frontiers towards the Moors in the south. Alentejo having been most exposed to the attacks of the Spaniards, is defective in population. Algarve is a very small division, which has however the honour of forming an addition to the royal titles, as Navarre to that of France; those minute provinces having been comparatively recent acquisitions. The population of the whole is, according to Boetticher, 1,838,879; but by Murphy's statement 2,588,470. As this last is derived from Portuguese authors, who have little skill in statistics, it seems to be exaggerated as usual in such cases†.

COLONIES.] The chief colony from Portugal is that established in Brasil; and they still retain many settlements on the coast of Africa, with Goa and Macao in the East Indies, the relicts of great power and territory.

ARMY.--NAVY.] The army was only computed at about 24,000; and the militia might perhaps amount to as great a number. The naval power, once considerable, is reduced to thirteen sail of the line, and fifteen frigates [3].

REVENUES.]

* The councils are, 1, that of the palace, which is supreme in justice, and has all the powers of a lord chancellor: 2, that of the inquisition, which was declared *royal* by king Joseph, while before it was only *papal*; it has four inferior chambers at Lisbon, Evora, Coimbra, and Goa: 3, that of the finances: 4, that of the colonies: 5, that of honour, or the affairs of knights: 6, that of war: 7, the admiralty. There are five sovereign courts of justice, *Relaçoens*, at Lisbon, Porto, Bahia, Rio Janeiro, Goa. MS. Notes.

† The cities of Portugal are computed at 23, but some are very small; the villas or municipalities are 350; the villages are very numerous, and the parishes not less than 4262.

The state of Population given by Busching is drawn from fragments of an estimate made eighty years ago by the marquis d'Abrantes. Here is the state drawn up by the researches of the magistrates, and published in 1802.

	Parishes.	Hearths.
Entre Douro e Minho	1327	181,593
Tras os Montes	711	77,054
Beira	1292	224,649
Estremadura	420	120,333
Alentejo	369	76,246
Algarve	71	25,523
Lisbon and the *banlieue*	72	54,954
	4262	760,402

It is supposed that ten fires give thirty-eight persons, because many live solitary, who in other countries are with their relations or friends; but in Lisbon five persons may be allotted to each hearth, because more people live together, and there are more domestics. But when the total population is computed at 2,900,000, there seems to be some exaggeration. MS. Notes.

[3] Murphy, 119.

Since the year 1763, the soldiers have been well paid. At present there are twenty-eight regiments of infantry, twelve of cavalry, five of artillery, one of light troops, all strengthened according to circumstances. In 1798 there were forty-three regiments of regular militia, distributed as follows:

Entre Douro e Minho	8
Government of Oporto	4
Tras os Montes	5

REVENUES.] The revenue is calculated at 2,000,000l. sterling, and the gold of Brazil mostly passes to England in return for articles of industry *.

POLITICAL IMPORTANCE AND RELATIONS.] Portugal retains small influence in the political scale of Europe. Her commerce is almost wholly dependent on England; but by land she is exposed to no danger except from Spain, or by the consent of Spain. The union of the two countries would doubtless be advantageous to both; but might prove detrimental to English commerce, and the weight of England in the Portuguese councils would infallibly subside.

Beira	-	-	7
Estremadura	-	-	8
Alentejo	-	-	8
Algarve	-	-	3

The military governments are seven; the six provinces, and the government of Oporto, composed of a part of Beira, and a part of Entre Douro e Minho. MS. Notes.

* According to the MS. Notes, the revenue may be computed at more than 70,000,000, and the national debt about 100,000,000 of French livres.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs. — Language. — Literature. — Education. — Universities. — Cities and Towns. — Edifices. — Roads. — Inland Navigation. — Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the Portuguese are discriminated into those of the northern and southern provinces, the former being more industrious and sincere, the latter more polite and indolent. In general the Portuguese are an elegant race, with regular features, embrowned by the sun, and dark expressive eyes. The prejudices of nobility are as common and pernicious in Portugal as in Spain; nor is that general intercourse found which imparts knowledge and vigour to society. All ranks seem fond of retirement and silence, and little inclined to social pleasures. Yet they are friendly to strangers, especially if catholics. The women are commonly of small stature, yet graceful and beautiful. Like other southern nations, the Portuguese esteem a plump roundness of the limbs; nor is the green, or rather sea-green, eye so much applauded by the European poets of the middle ages, without its share of modern admiration[1]. Ladies of rank still imitate the industry of their ancestors in spinning flax from the distaff: and the oriental manner of sitting on cushions on the floor is often practised. The dress resembles the Spanish, but the men prefer the French, with the exception of a large loose cloak. The peasantry remain miserable vassals of the Fidalgos, or gentlemen*.

In diet the Portuguese are temperate, or rather abstemious; and the beauty of the climate induces them to spend most of their time in the open air, a house being little more than a conveniency to sleep in.

The games are billiards, backgammon, cards, and dice. The common people fence with a quarter staff; but the chief amusement consists in the bull fights, already described in the account of Spain. The arts and sciences are almost entirely neglected, except by a few among the clergy†.

LANGUAGE.] The Portuguese language is more remote from that of Castille than might be expected from the circumstances. As the royal race was of French extract, it is supposed that many of the words are derived from the Limosin and other dialects of the south of France. It is a grave and solemn speech; but would have been little known among foreigners, had it not been diffused by the fame of the Lusiad.

LITERATURE.] The lierature of Portugal may be said to commence with Diniz, the sixth sovereign, who cultivated poetry and the belles lettres, and founded the university of

[1] Murphy, 139. The French poets are full of yeux verds. Drummond of Hawthornden (Letters, p. 252.) praises the green eye; which is still found even in the Orkneys, as appears from the Transactions of the Scotish Antiquaries, vol. i.

Link remarks, 210, that the round noses and thick lips of the Portuguese contrast with the Spaniards.

* There are no longer any duennas, and husbands are not more jealous than elsewhere. The peasants live on salted fish and vegetables. MS Notes.

† Link observes, p. 87, that neither fine paintings nor taste are to be found in Portugal.

Coimbra. In his reign lived Vasco Lobeira*, who is said to have been the original author of that famous romance Amadis de Gaula. In more recent times, Sa de Miranda has acquired reputation in poetry. The chief historians are Joaõ de Barros, Diogo de Couto, Fr. † Luis de Sousa, Fr. Bernardo de Brito, Osorio bishop of Sylves (latin), Duarte Ribeiro de Macedo. Other writers are the venerable Bartholomeo do Quartal, and the count de Ericeira [2]. Among the poets are celebrated Camoens, Diogo Bernardes, Antonio Barboza Bacelar, and Gabriel Pereira: two dramatic writers are also mentioned, Gil Vicente and Antonio Joseph ‡, whoſe plays are publiſhed in four volumes § ; and Nicola Luis, called the Portugueſe Plautus. In mathematics Pedro Nunez diſtinguiſhed himſelf at the beginning of the sixteenth century. Of late years natural history begins to be a little studied: but Portugal is the last of nations in that department ‖.

Education.—Universities.] Education seems greatly neglected in Portugal, though the university of Coimbra be of ancient date. Link computes the students at 800. That of Evora was founded in 1553; and a college at Mafra in 1772. The royal academy is of recent erection, and the design aspires to considerable public utility.

Cities and Towns.—Lisbon.] Lisbon, the capital city of Portugal, was called by the ancients Ulyssippo, and the foundation fabulously ascribed to Ulysses. The situation is grand, on the north side of the mouth of the Tajo, and is ſheltered on the N. W. by a ridge of hills. The haven is capacious and excellent. This capital was regained from the Moors in the twelfth century, as already mentioned. The population is computed at about 200,000. The earthquake of 1755, a dreadful and memorable epoch among the inhabitants, has contributed to the improvement of the city, the new streets being broad and well paved, resembling those in the west end of London. For constant residence the ladies prefer the attic floors; and ventilation and coolness are chiefly consulted, grates being almost unknown; while in winter a warm cloak supplies the place of a fire [3]. There is no court end of the town; and the finest streets are inhabited by tradesmen. There are public walks, two theatres, and a circus for the bull feasts. The patriarchal establishment is singularly magnificent; and the revenue is computed at 114,000l. The English have an open burial ground, in which are deposited the remains of the celebrated Henry Fielding, an author unrivalled in the just delineation of life. The royal monastery of Belem, founded by king Emanuel in 1499, stands about five miles S. W. of Lisbon; and to the N. is a noble modern aqueduct completed in 1732. The consumption of butcher's meat at Lisbon in 1798 was, 27,985 oxen, 1,279 calves, 27,562 sheep, 11,927 hogs ¶.

Porto.] The next considerable town, especially in the eye of strangers, is that of Porto (generally called *O Porto*, that is, *the Port*, *O* being the masculine article),

* He did not live till the reign of Fernando, and died 1403. (*Note communicated.*)

† This work is only the history of the Dominicans in Portugal. (*Note communicated.*)

[2] Murphy, 157.

‡ This is perhaps a mistake for Antonio Joseph da Silva: 2 vols. of the Theatro Comico, 1744, are of his composition. The later editions of this collection are in four; and these I suppose to be what are meant. Antonio Joseph was burnt for Judaism! (*Note communicated.*)

§ Gil Vicente is their only famous dramatiſt. (*Note communicated.*)

‖ Yet Camara, D'Andrada, and Fragoso, are not unknown in mineralogy.

The royal academy of Lisbon exists no more; and the university of Evora has remained suppressed since 1759. MS. notes.

Pombal introduced the sciences by force; and since his adminiſtration they have daily diminished. MS. notes.

[3] Murphy's Travels in Portugal, 148. The northern branch of the Tajo at Lisbon is alone practicable for large vessels. MS notes.

¶ Our army and navy ate half of them. There cannot be any accurate account of the calves slaughtered, because it is forbidden to slaughter them, and what veal is to be had is sold privately.

seated

seated on the N. side of the river Douro, about five miles from the sea, upon the declivity of a hill, so that the houses rise like an amphitheatre The streets are however narrow, and the houses ill constructed. Population about 30,000. The churches are of little note: the British factory is a large and neat building. The chief exports are wine, oranges, lemons, &c., and linen cloth to the American colonies in Brazil.

SETUVAL.] Setuval, or St. Ubes, is a considerable town, with about 12,000 inhabitants, and a prosperous commerce.

BRAGA.] Braga, though inland, is another considerable town: and in the second northern division are the towns of Miranda and Braganza, the last of which conferred the ducal title on the present reigning family.

In the province of Beira is the venerable city of Coimbra, with its ancient university. Alentejo contains the city of Evora, rather of ancient fame than of modern consequence. Tavira, the principal town of Algarve, does not exceed 5000 inhabitants *.

EDIFICES.] The chief edifices of Lisbon are the cathedral, and monasteries, formerly mentioned. The nobility, as in Spain, crowd to the capital, whence the country is little decorated with villas. In the mountains of Cintra, the furthest western extremity of Europe, about 20 miles W. of Lisbon, is placed a remarkable monastery, 3000 feet, as is said, above the sea, towards which there are remains of ancient buildings, and the cistern of a Moorish bath replenished by a never-failing spring. On the E. of the mountain is a summer palace of Moresque architecture. The environs are rich and delightful, supplying most of the fruits and greens used at Lisbon. In this quarter is also a small vineyard, that of Carcabelos, yielding a peculiar grape, which gives name to our Calcavella, a vine generally fabricated in London [4].

INLAND NAVIGATION.] Portugal seems to have paid no attention whatever to the construction of canals; nor perhaps are they found indispensable in a country abounding with rivers, and bordered with an ample extent of sea coast.

MANUFACTURES AND COMMERCE. The Portuguese manufactures are few and unimportant: hats and paper have been lately fabricated at Lisbon; but the chief manufactories are those of woollen cloth at Covilham, Portalegre, and of printed linen at Azeitaon.

A considerable commercial intercourse subsists with England; but the balance in favour of the latter appears to be about 400,000l. sterling: and Ireland gains by her exports about 63,000l. annually [5]. The Falmouth packets bring frequent remittances of bullion, coin, diamonds, and other precious stones; and for a considerable time the Portuguese gold money was current in England. Besides woollens and hardware, England transmits to Portugal large cargoes of salted and dried fish, the last article to the annual amount of about 200,000l. The exports of Portugal are chiefly wine, oil, oranges, lemons, figs, sugar, cotton, cork, drugs, and tobacco. Portugal also maintains a considerable trade with her flourishing colony in Brazil, the inhabitants of which are computed at 900,000. The articles exported to America are chiefly woollens, linens, stuffs, gold and silver lace, fish dried in Portugal, hams, sausages, &c. with glass manufactured at Marinha †. Brazil returns gold, silver, pearls, precious stones

* Certainly it does. I heard it estimated at 20,000, and from the size of the town I believe that this estimate is not too great. My authority was M. Lempriere, the late consul at a very well informed and intelligent man. (*Note communicated.*)

[4] Murphy's Travels in Portugal, 241, &c. The noble aqueduct of Alcantara near Lisbon was built of white marble in 1738, there are 35 arches, the highest 230 feet. Reichard, *Guide des Voyageurs* Weimar, 1805, 8vo. i. 12

[5] Murphy's State, 62.

† This fabric (which all travellers in Portugal describe) was carried on by an Englishman, and could not have existed without an exclusive privilege. (*Note communicated.*)

of

of various descriptions, rice, wheat, maiz, sugar, molasses, cotton, ornamental timber, and many other articles rather curious than important. The drugs, spices, and articles used in dying must not however be omitted. The trade with the East Indies is inconsiderable; and that with the other European nations scarcely deserving notice: it is chiefly with Holland, France, Denmark, and Germany. Some trade is also carried on with the American states *. Nor is the internal trade at the great fair of Viseu beneath notice.

* The entries at the port of Lisbon, during four years, were as follow:

1796 - - -	1519	of which	483 English.
1798 - - -	1723	- - -	678 ———
1799 - - -	1492	- - -	570 ———
1801 - - -	1476	- - -	419 ———

The grain was formerly furnished by England, when in possession of her North American colonies, but is now supplied by the American States, Barbary, and Prussian Poland. Much rice is consumed, being imported from Carolina. MS. notes.

The coin, which the English call joannes, is in the Poruguese *peça*; the English moidore is the *monduro*, or *moeda de ouro*, that is simply gold coin. MS. notes.

Brazil supplies about twenty-seven millions of francs yearly in gold, or little more than a million sterling; and since 1780 always more than a hundred millions of merchandise. MS. notes. As it is well known that a great part of the Portuguese gold comes from Sofala, it must be included under that of Brazil, if it be not remitted to India and China in order to purchase merchandise in those countries.

The colonies are Brazil, Mozambic, Melinda, Sofala, Cuama, Angola, Benguela, with the isles St. Thomé, del Principe, Cape Verd, Madeira, Azores. In India, Goa, Diu; and Macao in China. MS. notes.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains. — Forests. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Portugal is familiarly known to be most excellent and salutary. At Lisbon the days of fair weather are computed to amount to 200 in the year; and those of settled rain seldom exceed 80. The medial heat is generally about 60° [1].

FACE OF THE COUNTRY.] The face of the country is generally fertile, though with many acclivities; and in the N. E. corner there rises a considerable cluster of mountains, seemingly unconnected with the great Spanish chains. The numerous vineyards and groves of orange and lemon trees, conspire with the crystal streams, and verdant vales, to impart great beauty and diversity to this favoured country. The soil, like that of Spain, is generally light: but the agriculture in rather a neglected state; and the farmers have a singular prejudice that soils of different qualities are equally adapted to any vegetables. The ground is rather scratched than ploughed, and is sown immediately; nor is the operation of the harrow much regarded. Meadows are little known except in the N.W. province between the Douro and the Minho; and many fine vales remain in a state of nature. The streams having generally a considerable fall, and the rains being violent though rare, the crops are sometimes destroyed by the force of the torrents *.

RIVERS.] The rivers of Portugal have been already enumerated in the description of Spain. The Tajo is here a noble stream, and its estuary near Lisbon affords a capacious haven, from two to nine miles in breadth. Among the native streams may be named the Mondego which passes by Coimbra †; the Soro which runs into the Tajo; and the Sadaon which forms the harbour of Setuval. Scarcely a lake can be traced in the map of Portugal; but some small pools have become remarkable from circumstances, such as the Escura situated on the summit of the mountain of Estrella in the province of Beira, and which is covered with snow during four or five months. This small lake is noted for a profound vortex, by the Portuguese writers, who are fond of fable, and little versed in the philosophy or history of nature. Another deep pool occurs near the village of Sapellos, which is said to have been the shaft of a gold mine worked by the Romans. The lake of Obidos, in the Estramadura, is sometimes open to the sea, and at other times closed with sand: it contains variety of excellent fish.

MOUNTAINS.] The mountains of this kingdom have not been exactly described. Those in the N. E. seem an unconnected cluster, as already mentioned: but the Spanish

[1] Murphy's Trav. 220.

* Link observes, p. 163, that the numerous monasteries impede the progress of agriculture. By a singular mismanagement there are no cellars, and the wine is kept in warehouses. Ib. 374.

† Celebrated by Camoens in the story of Inez de Castro:

Nos saudosos campos de Mondego, &c.

chain to the N. of Madrid, called by some the mountains of Idubeda, enters Portugal near the town of Guarda, and pursues its former course to the S. W. The chain of Arrabeda, in Estramadura, seems a branch or continuation of this: it is chiefly calcareous, and affords beautiful marble. The chain of Toledo appears, as not unusual with the most extensive ranges, to subside before it enters Portugal. In the province of Alentejo is however a small chain, seven leagues in length by two and a half in breadth, running between the city of Evora and town of Estramas, which may be regarded as belonging to the chain of Toledo. Estrella, already mentioned, gives source to the Mondego, and two other rivers, and belongs to the first mentioned chain. Monte Junto, the ancient Sagrus, is in Estramadura: its verdure affords a rich pasturage, and the breed of horses was formerly celebrated *.

Zoology.] The zoology of Portugal may be regarded as the same with that of Spain †. The horses are however much inferior, but the mules are hardy and strong. The oxen are sometimes equal in size to those of Lincolnshire; but even cows are rare, as the natural pasture is injured by the heat of the climate, and no attention is paid to artificial meadows [2]. The sheep are also neglected, and far from numerous; but swine abound, and are fed with excellent acorns, so that the Portuguese hams are deservedly esteemed.

Mineralogy.] The mineralogy of Portugal has been almost as much neglected as the agriculture. In the two northern provinces are seen immense mines, supposed to have been worked by the Romans, being perhaps the mines in the N. of Lusitania mentioned by ancient authors [3]. The mouth or rather pit of the largest, cut through the solid rock, is a mile and a half in circumference, and upwards of 500 feet deep; at the bottom it measures 2400 feet by 1400. Many subterranean passages pierce the mountain like a labyrinth, and the whole works are on the grandest scale. Other ancient mines are also found in these provinces. Nor were these mines wholly neglected in the middle ages; for there is an ordinance of king Deniz in favour of those who were employed in the gold mines of Adissa near the mouth of the Tajo [4]. But as the operations were attended with great expence, they were abandoned soon after the discovery of the Cape of Good Hope, it being found more profitable to import the metals from India, and afterwards from Brazil. Small veins of gold have been observed in the mountains of Goes and Estrella: and it is still found in the sand of some streams, as in ancient times the Tajo was celebrated for this metal. Under the domination of the Spaniards a mine of silver was worked, not far from Braganza, so late as the year 1628. Tin was also found in various parts of the northern provinces; and near Miranda there was formerly a royal manufactory of pewter. There are lead mines at Mursa, Lamego, and Cogo, and the galena ore is very productive of silver: copper is found near Elvis and in other districts. The iron mines are neglected, from a deficiency of fuel; though coal be found in different parts of the kingdom, and that of Buarcos supply the royal foundery at Lisbon. This bed of coal is about three feet six inches broad, and enlarges according to the depth. Emery is found near the Douro; and many beautiful marbles abound in this kingdom. The mountains of Goes, and others, produce fine granite: and talc occurs near Oporto. Amianthus is discovered in such quantities, that it has been recommended to the artillery in the form of incombustible paper. The felspar of Estrella, mingled with white clay, has been found to

* The description of the mountains forms the best part of Link's work. He visited the northern chain of Gerez, that of Maram, and that of Estrella. They are all granitic, and the summits about 6000 feet, while some of the Spanish may be 8000.

† For the Botany see Spain.

[2] Murphy's State, 42.

[3] Ib. 25.

[4] Ib. 43.

compose excellent porcelain. Fullers'-earth occurs near Guimerans. Portugal also boasts of antimony, manganese, bismuth, and arsenic: and near Castello-Branco are mines of quicksilver. Rubies have been discovered in Algarve; jacints in the rivers Cavado and Bellas; beryl or aquamarine in the mountain of Estrella. In short Portugal abounds with minerals of most description; and nothing is wanting but fuel and industry.

MINERAL WATERS.] Nor is there any defect of mineral waters of various kinds. The baths of Caldas da Rainha, in Estramadura, are the most celebrated; and the next are those of Chaves. Salt and petrifying springs also appear; and others to which the ignorance of the Portuguese has ascribed wonderful qualities, which are dismissed from the modern school of natural knowledge.

NATURAL CURIOSITIES.] Many of these have been classed among the natural curiosities of the kingdom, as well as some of the lakes and mountains. On the north bank of the river Douro is a high massy cliff, with engraved letters or hieroglyphics, stained with vermillion and blue; beneath which is a grotto, supposed to abound with bitumen, which proved fatal to the parish priest in his attempt to explore it in 1687. Some petrifying caves, &c. will not now be admitted to the rank of natural curiosities. Striking and singular scenes of rock, water, and ever-green groves, abound in this beautiful country.

PORTUGUESE ISLANDS.

AZORES.] The Azores properly belong to Europe, and not to Africa, under which last division of the globe they have hitherto been classed. They are about thirteen degrees from Cape St. Vincent in Portugal, while the African shore is more distant by at least one degree; and their latitude rather connects them with Europe than with Africa: not to mention that they were first peopled by Europeans, and that this portion of the globe is too small to abandon any appendage *.

The

* In some maps, see *Voyages au Nord*, a *shallow*, or deep shoal, runs from the Land's End in England to the Azores; but they rather seem a continuation of the Spanish mountains. M. Walckenaer, in a note to the description of the Azores in the French translation of this work, iii. 398. mentions that the island *Corvo* seems to be clearly indicated in a Spanish map, dated 1346 in the National Library of Paris (MS. 6816, as appears from another note vi. 360.): and in another map in his own possession dated 1384, formerly in the Pinelli Library, in which last *St. George* is also indicated. It would also seem that *Cape Bojador* was known in 1346, as it appears in the first map, as well as in the second. In these maps, as well as in that of Parma 1367, of which there is a copy at the *Depot de la Marine*, the Canaries, the island of Madeira, and Porto Santo, are also laid down. Apparently all these islands, and Cape Bojador, were not unknown to mariners: but the Cape of Good Hope had received a name long before it was passed; and the islands, probably at first only visited for water, escaped due notice till they began to be colonized. The jealousy of commerce has also often contributed to conceal discovery; and as the Venetians and Genoese were the chief navigators at that period, perhaps if the libraries of Italy were examined, we should find fresh proofs of these discoveries; which, as the Italians never planted colonies, were neglected and forgotten.

Hartmann, in his edition of Edrisi, 1796, p. 3, says that the Arabian geographer indicates the Canaries under the name of *Chaledat*, or the Fortunate Islands. In describing the islands in the Atlantic, according to Edrisi and the Arabian geographers, p. 310—322, Hartmann gives various opinions with regard to these islands; and the fable concerning a statue, to be found in the Parma map (which was executed at Venice in 1367 by Fr. Picigano), may also be found in Edrisi A. D. 1153. But the Arabian names of the islands have no relation with the modern names, while perhaps, the name of *Corvi* or the Island of Crows may be taken from the Raka, of a similar import in Edrisi. The learned editor also seems to think that the *clima* must infer the Azores. The story of the Almagrurin, or wanderers, who proceeded from Lisbon to a distant country in the west, may be classed among the fables concerning the early discovery of America.

The general accounts bear that these islands were all successively discovered by the Portuguese, before 1449, who gave them the name of Azores from the number of goshawks, which they here observed remarkably tame, there being neither man nor quadruped. But there is some reason to believe that they were not unknown before, though, being left uninhabited, they attracted little attention. The map executed at Venice in 1367, by Fr. Picigano, and preserved in the ducal cabinet at Parma, though it contain the Canary Islands, with their modern names, does not present the Azores; but that of Bianco, 1436, presents even the most remote and detached of these islands, Corvo and Florez. But such monuments cannot always be depended on, as additions may have been made a century after their first construction.

However this be, in 1466, the Portugese king gave them to his sister the duchess of Burgundy; and they were in consequence colonized by Flemings and Germans, among whom was Job de Huerter, father-in-law of the celebrated geographer Martin Behaim, who resided in Fayal. The subsequent history is rather obscure; but the Flemish inhabitants seem to have always acknowledged the king of Portugal.

The crown of Portugal having become united to that of Spain in 1580, the inhabitants of these remote islands appeared willing to reject the Spanish yoke, and to acknowledge Don Antonio as their sovereign. The French in consequence sent a body of troops to Tercera, commanded by De Chaste, in 1583, who were, however, defeated in a battle with the Spaniards*.

These events seem to have excited the attention of the English during their warm competition with Spain; and in 1589, the earl of Cumberland fitted out four ships at his own expence, with which he cruized off the Azores. The account of this expedition was drawn up by Edward Wright, an excellent mathematician who was present, and supposed to have been the first author of the celebrated invention for the construction of charts, commonly called Mercator's projection, though it seem to have been known a century or two before, as it cannot be distinguished from that of several maps and charts in which the degrees of longitude are carelessly reduced to squares. It appears that the people of Florez still acknowledged Don Antonio as their king, and supplied the English with provisions. Some Spanish ships were taken; but the rich caracs had departed a week before their arrival. The town of Fayal was plundered†. In 1591, a glorious action was fought near the isle of Florez, by Sir Richard Grenville, in the Revenge, against fifteen Spanish ships of war; and though his vessel was reduced to a complete wreck, her gallant commander died on the second day of his captivity, rather of vexation than of his wounds. The account of this action is written by the celebrated sir Walter Ralegh. In the same year, 1591, captain Flicke commanded a cruizing voyage to the Azores, and has himself drawn up an account of the expedition. The intention was, as usual, to watch for Spanish ships from the West Indies. The Spaniards having probably altered their arrangements, this practice of cruizing off the Azores appears to have only continued for a few years; and the history of these interesting islands relapses into obscurity.

Whether Madeira was first discovered by the English in 1346, as has been asserted, it seems, with the Canaries, to have been known by the Venetian navigators in the fourteenth century; and though the name of the Isle of Crows may be borrowed from Edrisi, yet the mention of St. George seems clearly to indicate that the Azores were also not unknown to the Venetians, who, in the case of Marco Polo and others, have utterly neglected their own fame; and Gibbon has justly observed that learning is less indebted to this commercial republic, than to any of the petty princes of Italy.

* See Thevenot's Collection, vol. iv. for the voyage of De Chaste. The celebrated Herrera also gave a separate history of these transactions, Madrid 1591, 4to.

† See this voyage in Hakluyt, vol. ii. or in Astley's collection.

A furious

A furious earthquake is said to have been felt on the 9th of July 1757.

The chief isles are St. Michel, Tercera, Pico, or the Peak, and Fayal, with two smaller far in the west called Florez and Corvo. An excellent map was published at Paris, in 1791, from the observations of M. Fleurieu, and of Tofino the Spanish astronomer. St. Michel is represented as about forty British miles in length, by about twelve of medial breadth. The finest oranges are exported from this island to London; the large being called by the name of the isle, while the small are the noted pot oranges. Tercera is about twenty-five by fifteen. The Peak about thirty by ten; and is exceeded by St. George in length, but the breadth of the latter seldom exceeds five miles. The detached islands of Florez and Corvo are very small, especially the latter.

The volcanic mountain, which gives name to the Peak, is by some reported to equal that of Teneriffe in height. M. Adanson, who visited these islands on his return from Senegal in 1753, says that the Peak is about half a league in perpendicular height; the common French league being 2450 toises, the height would on this supposition be very moderate, not exceeding 7350 feet. In the views which accompany the French map, the Peak rises from the sea in the shape of a bell. This island is said to produce excellent wine.

The Peak of the Azores would form a very convenient first meridian of longitude, instead of the various and confused distinctions recently adopted; and which seem rather to originate in national vanity, than in any just principles of the science, which they greatly tend to obscure. Itself a most remarkable object, and placed near the western extremity of Europe, no situation could be preferable for this important purpose, which would tend so much to throw a clear and universal light on geographical positions.

In general the Azores are mountainous, and exposed to earthquakes and violent winds; yet they produce wheat, wine, fruits, and abundance of wood. The chief is Tercera (whence they are sometimes styled Terceras*), being 15 leagues in circumference. The capital town is Angra, on the S. E. side of Tercera, with a harbour defended by a fortress, in which resides the governor of the Azores. Angra is a bishopric, with some handsome churches, particularly that of the Cordeliers; and there are two other monasteries, and four nunneries†.

* Terceras and Azores are of the same import. Tercera is the Tiercel of our falconry. (*Note communicated.*)

† Busching in his Geography, (iii. 590. Fr. tr.) has rightly placed the Azores after the description of Portugal; but he errs while he includes Madeira in the same description, not considering that the latter is far nearer to the coast of Africa than to that of Europe, and the general rule is to ascribe the isles to the nearest continent. Nor is his argument, that the Azores belong to Europe because the chief town Angra sends a deputy to the assembly of the states of Portugal, like the other towns of the kingdom, very cogent, as some of the Russian governments include portions of Asia and Europe.

The description of Busching is in his usual prolix and feeble manner, he being a dry compiler incapable of seizing interesting circumstances, but some hints may be extracted.

The Azores have also been called the *Flamengas*, or Flemish Islands, having been colonized by that people. St. Michel, the most populous, is said to contain 51,500 souls, besides 1393 religious. The produce of wheat and millet is very considerable, and that of wine computed at 5000 pipes. These particulars Busching seems to have drawn from the Historical Geography of Portugal, by Don Luiz Caetano de Lima, 1734, 6. folio. The chief town of St. Michel is Ponta Dalgada, which has 1879 houses, three churches and seven convents. The next town is Villafranca. The new isle, which arose in 1720 between St. Michel and Tercera, has since disappeared. Tercera is so called, because it was the third isle which was discovered. The episcopal city of Angra has a considerable port, on the east of which is a mountain called *Brasil*, a name probably given by the mariners from a supposed isle called Brasil, arbitrarily placed in the western ocean in some old maps. Angra is a neat city, the residence of the governor-general since the year 1766, and contains five churches besides the cathedral. Pico carries on a considerable trade in wine, which seems to be sold as Canary. The chief town of Fayal is Horta or Huerta, probably connected with the name of Job de Huerter.

According to M. Adanson, the harbour of Fayal presents a beautiful amphitheatre, clothed with trees; the town has 5000 inhabitants, but may be said to consist of convents: the governor is styled *Capitam mor*. The climate and soil are excellent, there being no occasion for fire in the winter. The trees are walnuts, chesnuts, white poplars, and particularly the arbutus or strawberry tree, whence the name, for Fayal in the Portuguese implies a strawberry*. Cattle, &c. abound: yet almost the only birds are a kind of blackbirds, speckled with white. Fayal is rather mountainous, and there is a volcano near the centre, but the last eruption was 1672. It is to be regretted that these interesting isles, like all other Portuguese settlements, are almost unknown †.

* In Portuguese (see the dictionary of Vieyra), a strawberry is *morango*. In the same language *fayã* is a beech tree, and *fayal* a place where beech trees grow, whence he specially says is derived the name of *Fayal*, an island of the Azores, so called from the number of beech trees growing in it. The arbutus is *metronho*, so that our author must be mistaken in his etymology.

† According to M. Kerguelen, (*Voyage dan la mer du Nord*, Paris 1771, 4to. p. 161.) there really exists an isle, or rather large rock, called *Rokol*, in lat. 57° 50′ long. 16° W. of Paris; that is about five degrees S. W. of St. Kilda: another remote particle of Europe.

SWITZERLAND.
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48
47
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Longitude East from Greenwich
Zell
LAKE of ZELL
Begginen
SHAFFHAUSEN
Hallau
Neukirch
Stein
Diessenhofen
Stekboren
CONSTANCE
Buckhorn
LAKE of CONSTANCE
Langen
Romanshorn
Lindau
Waldshut
Eglisau
R. Thur
Eyn
Huningen
BASEL
Sekingen
Klingnau
R. Rhine
Rayserstaul
Winterthur
Pfauenfield
THURGOVIA
Arbon
Weil
Rosenach
Rheineck
Rheinfelden
Liestal
CANTON
Bruk
of BASEL
Lauffen
Thiersten
Waldenburg
Aar R.
Arau
Mellingen
Baden
Limat R.
Reuss R.
Thur R.
Gossau
St Galle
Trogen
Hohenembs
CANTON
of Appenzell
APPENZELL
Lichtensteg
Moutier
Arbourg
Zofingen
Murg
Hargen
Grüningen
Rapperschweil
Uznach
Feldkirch
Wangen
Richensee
Wellisau
Sursee
Sempach
C. of Zug
ZUG
Einsiedlen
Wesen
Wallenstadt
Bludens
Biel
Nidau
Buren
Hulweil
Kirchberg
Burgdorf
Landeron
Neuville
Cerlier
Hindelbank
Arberg
CANTON
LUCERNE
Glarus
Sargans
Ragaz
Meyenfeld
NEUCHATEL
Bolligen
Emen Thal
Brunen
Engi
Cudrefin
BERNE
Stans
Sarnen
Altorf
Haldensten
Morat
Laupen
Belp
Aarberg
Kirchdorf
Diesbach
Estavayer
Payerne
FRIBURG
Yverdun
Gransson
Orbe
CANTON
of
VAUD
Romainmotier
Moudon
Echallens
Bulle
Gruyere
Oron
Lucens
Romont
Schwan see
FRIBOURG
Thun
Unterseen
Brienz
Lake of Thun
Scherdel M.
Faulhorn
Niesen M.
Lauenen
Yaun
Stephen
Saner
Saphorin
Vevay
Lenk
Munster
Grimsel
Furca
Crispalt M.
Tusis
Leiz
Tödi M.
Sagens
Coire
Embs
Haldensten
Tron Martin
Ragaz
Meyenfeld
Martins Bruk
Lavin
Munster
Morges
LAUSANNE
Arbonne
Rolle
St Prex
Galli
Trefex
LAKE of GENEVA
Nion
Evian
Villeneuve
Noville
Copet
Thonon
Aigle
Cornein
Hermance
Dailps
Colonge
CHABLAIS
St Morice
GENEVA
Sion
Sierre
Leuk
Visp
Brigg
Rhone R.
Munster
Ernen
Mörie
Simplon
Premia
Domo d Ossola
Val Anzasca
Monte Rosa
Mont Blanc
St Bernard
Sallenche
Bone
Ville
Martigny
Bourg St Pierre
Contamine
Granson
Riddes
Liddes
Orsieres
Entremont
Bagnes
Val d Aosta
Val Leventina
Bellinzona
Rogoretto
Chiavenna
Tirano
Morbegno
Bormio
Como
Lanzo
Porto
Riva
Trid
Baveno
Pavia
PIEMONT
Lake Maggiore
Lugano
Mendrisio
Varese
Milan
Lodi
Adda R.
Oglio R.
Brenta R.
Inn R.
Rhine R.
Aar R.
Reuss R.
Limat R.
Thur R.
Ticino R.
Doubs R.
Rhone R.
Arve R.
Dranse R.
Drance R.
Sarine R.
Simme R.
Lake of Neuchatel
Lake of Geneva
Lake of Lugano
Lake of Como
Lake of Maggiore
Lake of Gersau
Lake of Thun
Lake of Brienz
Mont Blanc
Mont Cervin
Mont Rosa
Mont Buet
Mont Velan
Mont Combin
Mont Simplon
Mont Gothard
Mont Crispalt
Mont Scheidegg
Mont Jura
Mont Vogelberg
Mont Bernina
Mont Splügen
Mont Stelvio
Mont Scherpion
Mont Julier
Mont Albula
Mont Platta
Mont Wetterhorn
Mont Schreckhorn
Mont Finsteraarhorn
Mont Jungfrau
Mont Monch
Mont Eiger
Mont Blumlis Alp
Mont Glarnisch
Mont Todi
Mont Scesaplana
Mont Tödi
Mont Ruchi
Mont Tambo
Mont Splügen
Mont Stelvio
Mont Scherpion
Mont Julier
Mont Albula
Mont Platta
Mont Wetterhorn
Mont Schreckhorn
Mont Finsteraarhorn
Mont Jungfrau
Mont Monch
Mont Eiger
Mont Blumlis Alp
Mont Glarnisch
Mont Todi
Mont Scesaplana
Mont Tödi
Mont Ruchi
Mont Tambo

SWISSERLAND.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names.—Extent.—Boundaries.—Original Population.—Progressive Geography.—Historical Epochs and Antiquities.

NAMES.] THE provinces now known by the collective name of Swisserland, were in ancient times distinguished by several appellations. By the Romans they were regarded as a part of Gaul; and the chief possessors were the Helvetii on the west, and the Rhæti on the east; the chief city of the Helvetians being Aventicum, now Avenche. After the fall of the Roman empire, this interesting country may, in a general point of view, be considered as possessed by the Alemanni on the east, who also held Suabia, and Alsace; and on the west as a part of Burgundia, the inhabitants being styled *Burgundi trans Jurenses*, because, with regard to France, they were situated on the other side of the mountains of Jura [1]. Divided among several lords, secular and spiritual, the inheritance of the former at length chiefly centered in the house of Hapsburg, afterwards the celebrated family of Austria: and on its emancipation in the beginning of the fourteenth century first appeared the modern denomination of Swisserland, either derived from the canton of Schweitz, distinguished in that revolution; or from the general name of Schweitzers, given by the Austrians to this alpine people. For the sake of precision modern writers restrict the orthography of Schweitz and Schweitzer to the canton; while the general appellation for the people is the Swiss, and for the country Switzerland, or Swisserland.

EXTENT.] In length, from east to west, Swisserland extends about 200 British miles, and in breadth, from north to south, about 130. The contents in square miles have been estimated at 14,960; but a great part is lost to human industry, consisting of vast rocks, partly covered with eternal ice and snow. Even of this country the boundaries are rather arbitrary than natural; though on the west mount Jura forms a grand division from France, and on the south the Pennine Alps, a partial barrier from Italy. On the east lies the Austrian territory of Tyrol, and on the north is Suabia, containing as it were an excrescence of Swisserland on the other side of the Rhine, the small canton of Schaffhausen.

ORIGINAL POPULATION.] The original population is thought to have been Celtic; and it was reported that at the beginning of the last century the people of a small district used a language resembling the Welch. Yet it would be difficult, either from

[1] D'Anville Etats form. en L'Europe, p. 13. 93.

history

history or from ancient appellations, to trace the residence of the Celts in Swisserland; and there is every reason on the contrary to believe that the Helvetians were a Gothic race, a very ancient colony of Germans. Cæsar, who first disclosed the various races of men who inhabited Gaul, no where throws a positive light on this subject; but when he describes Celtic Gaul as beginning beyond the Rhone, it follows that he did not regard the Helvetii as Celts; and the proximity of Germany must induce us to consider the Helvetians as a German people. In the curious collection of Goldastus[z] there are several glossaries, and fragments of the ancient language used in this country, even in the eighth century, which thence appears to have been pure Gothic, without any Celtic admixture. The Rhæti on the east are said to have been a Tuscan colony: but a faint resemblance in manner sometimes led the ancients to rapid conclusions. It is difficult to conceive how the polished Etrurians should take refuge in the midst of barbarous nations, or why no remains of Tuscan buildings or art have been discovered in this their supposed habitation.

PROGRESSIVE GEOGRAPHY.] The progressive geography of Swisserland may be traced with considerable clearness from the contest of Cæsar with the Helvetians, through the classic, Francic, and native historians to the present time.

HISTORICAL EPOCHS.] The chief historical epochs may be arranged in the following order:

1. The wars with the Romans; the subjugation of the Helvetii, and Rhæti, and the subsequent events till the decline of the Roman empire in the west.

2. The irruption of the Alemanni, in the beginning of the fourth century, who are by some supposed to have extirpated the ancient Helvetians.

3. The subjugation of the western part of Swisserland as far as the river Reuss, by the Franks, who annexed that portion to Burgundy. The Grisons on the east were subject to Theodoric, and other kings of Italy.

4. The conversion of the country to Christianity by the Irish monks Columbanus, Gallus, and others, in the beginning of the seventh century.

5. The invasion of Alemannia by the Huns * in the year 909; and the subsequent contests with these barbarians, till the middle of that century. The history of the abbey of St. Gal at this period is interesting, both in a literary point of view, and from the singularity of the events: it was ravaged by the Huns, who were afterwards defeated by Conrad king of Burgundy, about the year 928. See the collection of Goldastus.

6. About the year 1030 the provinces which now constitute Swisserland began to be regarded as a part of the empire of Germany; and in the course of two centuries they gradually became subject to the house of Hapsburg.

7. The commencement of the Swiss emancipation, A.D. 1307; and the subsequent struggles with the house of Austria.

8. The gradual increase of the confederacy, the Burgundian and Swabian wars; and the contests with the French in Italy.

9. The history of the reformation in Swisserland.

10. The insurrection of the peasants of Bern, in the middle of the seventeenth century.

11. The dissolution of the confederacy by the French invasion, A.D. 1798.

ANTIQUITIES.] The ancient monuments of Swisserland are not numerous, consisting chiefly of a few remains of the Romans, at Aventicum and Vindernissa. Some also occur at Ebrodunum, or Yverdun, and at Baden the ancient Thermæ

[z] Rerum Alamannicarum Scriptores, 1661. fol.

* The Ugurs so called by the writers of the time. They were a branch of the Voguls, a Finnish race.

Helveticæ. Of the middle ages are many castles, churches, and monasteries, the most noble among the latter being the abbey of St. Gal, the library of which supplied the manuscripts of three or four classical authors, no where else to be found. Some interesting monuments relate to the emancipation of the country, and have contributed to extend the spirit of freedom from generation to generation.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Army. — Revenue. — Political Importance and Relations.

RELIGION.] THE religion of the Swiss countries is in some the Roman Catholic, in others the reformed. Of the former persuasion are Uri, Schweitz, Underwalden, cantons which founded the liberty of the country, with Zug, Lucerne, Friburg, Solothurn, part of Glarus, and Appenzel. In these are found six bishoprics, and one metropolitan see. The reformed cantons are of the Calvinist, or Presbyterian persuasion; being the rich and extensive canton of Bern, with Zurich, Basel, or according to the French enunciation Basle, Schaffhausen, the greatest part of Glarus, and some portions of Appenzel. The country of the Grisons is chiefly protestant; and Vallais, an ally of the thirteen cantons, has been the scene of atrocious persecutions on account of its disaffection from the Catholic faith: but the inhabitants, to the amount of about 100,000, now profess the Roman Catholic system. In general the two persuasions live in the most amiable unity and moderation.

GOVERNMENT.] The government of Swisserland has been a fertile theme of discussion, from the time of Burnet and Stanyan, to the modern description of that able traveller Coxe. The more powerful cantons of Bern, Zurich, Lucerne, and Friburg, had retained much of the feudal aristocratic form: and the insurrection of the peasants, in the middle of the seventeenth century, unites, with repeated discontents, to convey no high practical eulogy on the constitution, as these simple and honest vassals were not influenced by theories of sedition, but acted solely from their own feelings of oppression. In the eye of the most candid observers the aristocracy had degenerated into a venal oligarchy, more intent on procuring the lucrative governments of the Bailliages, than on the promotion of the general advantage. The other cantons were more democratic; but the recent subversion of the government by the French has for some time reduced Swisserland to a dependent province, with new divisions and arrangements, which, as they may prove of a very short duration it is unnecessary here to describe. The laws of course partook of the nature of the government of each canton; and under the aristocracies was sufficiently jealous and severe. Yet Swisserland was one of the happiest countries in Europe; and recommended itself to the most intelligent observers equally by moral and by physical grandeur and beauty.

By the constitution of the 29th May 1801, Swisserland was divided into seventeen departments. The Pays de Vaud and Argovia were withdrawn from Bern; and the Grisons and Italian Bailliages formed two other departments. The other cantons remained as before, with some additions of ecclesiastic lands, &c. to Glaris, Appenzel, Friburg and Basel. The abbatial territory of St. Gallen, constituted the canton of Sentis by the division of 1798, which seems to be obliterated.

The constitution dictated by France, in February 1803, includes nineteen cantons, and the diet is composed of nineteen deputies, but those of Bern, Zurich, Vaud,

St. Gall, Argovia, and the Grisons have each two votes, because it is supposed that their respective population exceeds 100,000 souls. The Landaman is president of the diet, which assembles every year in the month of June. Each of the cantons retains its own laws, and has a great and a little council.

POPULATION.] The population of this interesting country is generally computed at 2,000,000, or about 130 to the square mile *. But so large a portion is uninhabitable, that on a subtraction of such parts the number might be about 200 to the square mile.

ARMY.] The military force was reckoned at about 20,000; but in the late struggle with France this force appears to have been divided, and little effectual. The Swiss regiments in foreign service were computed at 29; but they returned weakened in frame and morals, and seldom proved serviceable to the state. The permission to serve in foreign countries has been loudly blamed as a moral deformity; but when we consider the poverty and population of Swisserland, we may conceive that the want of native resources conspired with the ambition and curiosity, interwoven with the character of man, to stimulate the youth to this path of instruction and preferment, while the government only connived with the national wish †.

REVENUE.] The ruinous effects of French extortion cannot be divined; but the revenue of Swisserland was formerly computed at somewhat more than a million sterling, arising from moderate taxation, from tolls, national domains, and foreign subsidies. The cantons of Bern and Zurich were considered as opulent; while in others the resources hardly equalled the expenditure.

POLITICAL IMPORTANCE AND RELATIONS.] The political importance and relations of Swisserland are for a time immerged in those of the French empire. Should the Swiss emancipate their country, their chief object would be protection against the power of France; and in this view nothing could have been so serviceable as a strict alliance with Austria.

* The enumeration of 1801 only gave 1,499,000. *Walckenaer.*

† By the constitution of 1803, the national force of 15,203 men is thus apportioned:

Bern	2,292 men	Appenzel	486 men
Zurich	1,929	Soleure	452
Vaud	1,482	Basel	409
Saint-Gall	1,315	Schweitz	301
Argovia	1,205	Glaris	241
Grisons	1,200	Schaffhausen	233
Tessin	902	Underwald	191
Lucerne	867	Zug	125
Thurgovia	835	Ury	118
Friburg	620		

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Universities.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

MANNERS AND CUSTOMS.] AMIDST the general corruption of manners, those of the Swiss have long excited applause, from their moral uniformity, and frank independence. The writings of Rousseau, and others celebrated authors, have depicted the Swiss manners in almost every point of view, so that the theme has become trivial. Though moderate in diet the Swiss are attached to wine, which produces gaiety and not irritation. The houses are generally constructed of wood, in the most simple form, with staircases on the outside; yet their appearance singularly coincides with the picturesque character of the country. The dress of the lower ranks is little subject to the laws of fashion, and in many cantons there are regulations to prevent idle ornament. Among the superior classes the manners may be considered as partly German, partly French; but it may be imagined that at present the latter preponderate. In general the Swiss are remarkable for an intense attachment to their native country, and there are few who do not return there to terminate their existence. This impression is almost irresistable, and liable to be awakened by the most minute circumstances. Hence in the French armies the tune called the Rance des Vaches, often sung by the Swiss milk-maids when they went to the pastures, was carefully interdicted, because it melted the rough Swiss soldier into tears, and seldom failed to produce desertion. This inconquerable passion seems to arise in part from a moral sensibility to the enchanting ease and frankness of the native manners; and in part from the picturesque features of the country, the verdant hills contrasted with Alpine snows, and delicious vales watered by transparent streams; scenes no where else to be discerned in such perfection, and which must powerfully affect the imagination, the parent of the passions.

LANGUAGE.] The language of Swisserland is a dialect of the German; but the French is much diffused, and is often employed by their best authors. In the most southern parts, bordering on Italy, the Valteline, and other territories acquired from Milan, the Italian is the common tongue. Among the Grisons in Engadina, and in some other parts, is spoken what is called the Romansh, which seems immediately derived from the Latin. The Vallais, or that part of Swisserland watered by the Rhone, has also a particular dialect: and at the city of Sion the French begins to be spoken, as it is also the prevalent language in that beautiful part of the canton of Bern called the Pays de Vaud. The language called the Vaudois appears to have been confined to the valleys of Piedmont.

LITERATURE.] Early monuments of Swiss literature, consisting as usual of chronicles and lives of saints, may be found in the collection of Goldastus above-mentioned. Since the restoration of letters, and the reformation of religion, Swisserland boasts of many eminent names, as the reformer Ulric Zwingli, born at Wildhausen; De Watt,

or Vadianus, a native of St. Gal; Bullinger; Herbst, who called himself Opporinus, the printer; Conrad Gesner, born at Zurich in 1516, who published an universal library, and some treatises on natural history; that noted quack Paracelsus, Turretin, and Osterwald. Among the writers of the last century may be named Bernoulli, the mathematician, a native of Basel; Scheuchzer, the natural historian; Haller, John Gesner, the natural philosopher; Solomon Gesner, the poet; Bonnet, Hirzel, and Zimmerman, physicians; Rousseau, and Necker, natives of Geneva; Lavater, the physiognomist; Euler the mathematician; Court de Gebelin, a learned but visionary writer, &c. &c.

EDUCATION.] The important subject of education has been little illustrated by the travellers into Swisserland; but as they testify their surprize at the knowledge generally prevalent among the peasantry, there is reason to infer that this useful province is not neglected. There is an university of some reputation at Geneva, and another at Basel; with colleges at Bern, Zurich, and Lucerne.

CITIES AND TOWNS.—BASEL.] In enumerating the chief cities and towns of Swisserland, according to the comparative standard of population, Basel will engage the first attention, being supposed to contain 14,000 souls. This venerable city stands in a pleasant situation, upon the banks of the Rhine, here broad, deep, and rapid, and suddenly turning to its long northern course, after a previous western direction [1]. Basel crowns both banks, and is united by a bridge. In the middle ages this city was named Basula; and appears in history soon after the age of Charlemagne, having succeeded Augst, or the Augusta Rauracorum. The cathedral is an ancient Gothic edifice; and travellers have remarked a singularity that all the clocks are one hour too fast, originally hastened, as is said, to defeat a conspiracy. The cathedral contains the tomb of the great Erasmus; and the university has produced many illustrious men.

BERN.] Bern must claim the next rank to Basel, possessing a population of about 13,000 [2]. This city is of singular neatness and beauty, the streets being broad and long, and the houses of grey stone resting on arcades. There are several streams and fountains; and the river Aar almost surrounds the city. The adjacent country is rich and fertile; and the prospect of hills, lawns, wood, and water, is bounded at a distance by the long chain of the superior Alps, rising like snowy clouds above the horizon. Bern contains several libraries, and collections of natural curiosities.

ZURICH.] Zurich is the third in rank among the Swiss cities, situated on a large lake, amidst a populous and fertile country, which produces abundance of wine for domestic consumption. The college and plans of education are respectable; and the public library contains some curious manuscripts.

LAUSANNE.] Lausanne contains about 9000 inhabitants, and is deservedly celebrated for the beauty of its situation, though in some spots deep and rugged. The church is a magnificent Gothic building, having been a cathedral, while the Pays du Vaud was subject to the house of Savoy.

The other chief towns are St. Gal, an ally of Swisserland under the former government. Mulhausen, also an ally. Geneva, a city of 25,000 inhabitants, has been assigned to France. Friburg and Schaffhaussen contain each about 6000 inhabitants; Lucerne, Solothurn, and Eiensiedlen, about 5000 each. Few of the others exceed 3000.

EDIFICES.] The chief edifices of Swisserland are in the cities; and there are few examples of magnificent dwellings erected by men of wealth or opulence. Inland navigation is partly interdicted by the mountainous nature of the country, partly rendered unnecessary by numerous rivers.

[1] Coxe, i. 149. [2] Ibid. ii. 226.

COMMERCE AND MANUFACTURES.] Commerce and manufactures do not much flourish in this inland region. Cattle constitute the chief produce of the country; and some of the cheese forms an export of luxury. The chief linen manufactures were at St. Gal. Printed cottons, and watches, also form considerable articles of sale; nor are silk manufactures unknown in Swisserland.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes. —Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters. —Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Swisserland is deservedly celebrated as salubrious and delightful. From its southern position considerable heat might be expected; but this, though sufficient to mature the grape, is attempered by the cold gales from the Alps and glaciers. When the sun descends beyond Mount Jura, on a summer evening, the Alpine summits long reflect the ruddy splendour, and the lakes for near an hour assume the appearance of burnished gold. The winter is however in some parts extremely severe; and the summer heat in the deep vales sometimes oppressive.

FACE OF THE COUNTRY, &c.] The face of the country is generally mountainous, the most level parts being the Thurgau, and a part of the cantons of Basel, Bern, Zurich, Schaffhausen, Soleure, and Friburg. Even these present what in some countries would be called mountains, from 2000 to 2500 feet above the level of the sea. No country in the world exceeds Swisserland in diversity of appearance; the vast chain of Alps with enormous precipices, extensive regions of perpetual snow, and glaciers that resemble seas of ice, are contrasted by the vineyard, and cultivated field, the richly wooded brow, and the verdant and tranquil vale, with its happy cottages and chrystal stream. Agriculture cannot of course be carried to great extent; but there is no defect of industry, and the grain seems sufficient for domestic consumption. Barley is cultivated even to the edge of the glaciers; oats in regions a little warmer; rye in those still more sheltered; and spelt in the warmest parts. Yet in general the produce does not exceed five for one; and it has been necessary to support public granaries in case of any deficiency. For the country being principally destined by nature for pasturage, the chief dependence of the Swiss is upon his cattle, and the number being extraordinary, much land is laid out in winter forage, which might otherwise be productive of corn[1]. A considerable quantity of hemp and flax is also cultivated; and tobacco has been lately introduced. The best vines are those of the Pays de Vaud, the cantons of Bern, and Schaffhausen, the Valteline, and the Vallais. There is also abundance of fruits, apples, pears, plums, cherries, filberts; with mulberries, peaches, figs, pomegranates, lemons, and other products of a warmer climate, in those districts which border upon Italy. The Vallais also produces saffron.

But pasturage forms the chief province of the Swiss farm; and the meadows are often watered to increase the produce of hay. In the beginning of summer the cattle are conducted to the accessible parts of the Alps, by cow-herds, who are called Sennen in the language of the country, and who either account to the proprietor for the produce, or agree for a certain sum. Those herds also support many swine, with the

[1] Busching, xiv. 12.

butter-

butter-milk, and other refuse. Scheuchzer, in his first journey to the Alps, describes the numerous preparations of milk, which form varied luxuries of the swains.

RIVERS.] The rivers of Swisserland are numerous; and among the most sublime scenes of this country must be classed the sources of the Rhine and the Rhone, two of the most important streams in Europe. If we estimate their length of course through the Swiss dominions, the Rhine is the most considerable; and is followed by the Aar, the Reuss, the Limmat, the Rhone, and the Thur.

The Rhine rises in the country of the Grisons, from a glacier upon the summit of Mont Bedus, or Badur, at the head of a valley, about nine leagues in length, called the Rhinewald [2]. This mountain and valley are little visited, even by the Swiss; and the upper part presents dreadful desarts of ice and snow, through which the stream descends, sometimes visible, sometimes working a hidden track beneath frozen arches. Such is what is esteemed the chief source of the Rhine, being that styled by the French the Upper Rhine, and in German the Hinter, or nearer Rhine. The middle Rhine, which rises not far from mount St. Gothard, is indeed the longest stream, whence its source was formerly ascribed to that celebrated mountain; yet the most eastern is probably the more considerable. The celebrated Saussure [3], than whom there cannot be a higher authority on these topics, informs us that the further Rhine, which he supposes to be so called because it is nearest to Germany, arises from a chain of mountains at the head of the valley of Disentis, called Crispalt, while their highest point is styled Badur: that the middle Rhine proceeds from the valley of Medelo, an appendage of St. Gothard: and these two torrents united receive a third from mount Avicula, called in French the Upper Rhine, and in German the Hinter Rhein, for in some French maps the names are inverted *. The heights here are about 6180 feet above the sea. From its source the Rhine pervades or borders Swisserland, for about the space of 200 British miles, running N. E. to the lake of Constance, whence it bends W. to Basel; where it begins its long northern course.

The Aar arises in the Alp called Grimsel [4], but there is a further source in the environs of that terrible summit styled the Schreckhorn and another from the glaciers of Finsteraar: bending its course to the N. W. till it arrive near Arberg, it afterwards turns N. E. receives the Reuss and the Limmat, and joins the Rhine opposite to Waldshut, after a course of about 150 British miles.

The Reuss, which divides Swisserland into almost two equal parts, eastern and western, springs from the lake of Lucendro [5], on the N. W. of St. Gothard. This lake is long and narrow, the upper part being surrounded with black precipices, spotted with eternal snow; while the lower presents a little verdant plain. From the other side of St. Gothard rises the Italian stream of the Tesino, which flows into the Po not far below Pavia. The Reuss joins the Aar, after a course of about 80 British miles.

The Limmat is composed of two streams, the Linth, which rises in the S. of the canton of Glarus, and the Mat † which springs in the country of Sargans. About ten miles after their junction, the Limmat enters the lake of Zurich, whence it flows about 20 British miles before it joins the Aar. On the banks of the Limmat commenced that dreadful conflict of the French against the Austrians and Russians, which extended down those of the Reuss, the line of battle being said to have reached for 90 miles;

[2] Coxe, iii. 243. Bourit, Descript. des Glaciers, tome iii. p. 62.
[3] Voyage dans les Alpes, tome vii. p. 72. 8vo.
* Mr. Coxe, and Bourrit, have confounded the Upper and Lower Rhine. See Weisse's map.
[4] Coxe, i. 342. [5] Saussure, vii. 44.
† Weiss calls this river the Senez.

while

while for fifteen successive days the whole region seemed enveloped in fire and smoke *.

The Rhone, a noble stream, can only be regarded as a Swiss river prior to its entering the lake of Geneva, after a course of about 90 British miles through that extensive vale called the Vallais. This river rises in mount Furca, the source being rather warm, and about 5400 feet above the sea. Yet in truth this source joins a more considerable stream, from an extensive glacier called that of the Rhone, where the majestic river god resides in his palace of arches formed under perpetual ice [6].

The Thur, a moderate current, rises in the S. of the country of Tokenberg, and pursues a N. W. direction to the Rhine. Other considerable streams are the Sana, and the Emme, which join the Aar, the Inn which commences his majestic progress in the Grisons, the Adda which waters the Valteline, and falls into the lake of Como, and the Toss and Glatt which join the Rhine.

LAKES.] The lakes of Swisserland are numerous and interesting. The most considerable are those of Constance on the N. E., and Geneva in the S. W. The former is about 45 British miles in length, and in some places 15 in breadth. This beautiful expanse of water is by the Germans also styled the Boden Zee. Towards the N. W. it is divided into two parts, called the upper and the lower lake, the latter of which contains the isle of Reichenau. Like all the other lakes of Swisserland, it is deeper in the summer than in the winter, owing to the melting of the snows, and is remarkable for producing large red trout.

The lake of Geneva extends in the form of a crescent, about 40 British miles in length, and nine at its greatest breadth. The beauties of this lake have been celebrated by Rousseau ; but would be considerably increased if it were sprinkled with islands.

Only a part of the lake Maggiore, or that of Locarno, is subject to Swisserland ; but the lake of Lugano forms an extensive body of water in that region. The lakes of Neufchatel and Zurich are each about twenty-five miles in length, by about four in breadth. That of Lucerne is about fifteen in length, and the breadth no where above three. Next to these are the lakes of Thun and Brientz ; of Joux and Rouss, on the French confines ; the lakes of Morat, and Bienne, of Sempach, Zug, Wallenstadt, and others of inferior note.

MOUNTAINS.] The mountains of Swisserland are the most celebrated in Europe ; and are supposed to yield in height to none, except those of South America, which derive their advantage from standing on an elevated plain. In a general point of view the Alps extend, in a kind of a semicircular form from the gulph of Genoa through Swisserland, which contains their centre and highest parts ; and close in the Carnic Alps on the N. of the Adriatic sea. This grand chain of mountains has, in ancient and modern times, been divided into different portions, known by distinct appellations. The maritime Alps are those which arise from the gulph of Genoa. Mont Genevre, whence springs the river Durance, was anciently named the Alpis Cottia, from Cottius, a prince who resided at Suza. Further to the N. were the Alpes Graiæ, now the little St. Bernard. The Alpes Penninæ consisted of the great St. Bernard, Mont Blanc, and the grand chain extending on the S. of the Rhone to the N. of modern Piedmont ; the eastern part being also styled the Lepontine Alps, from a people who inhabited that region which gives origin to the Rhone and Tesino. The Rhætian Alps extended through the Grisons and Tyrol, terminating in the Carnic, or Julian Alps. That chain which pervades Swisserland, from mount Sanetz in the S. W. towards the sources of

* New Annual Register, 1799, p. 447. This conflict spread in breadth from the Reuss to the Rhine. In Myttenthal, to the east of Schweitz, Suwarrof was defeated.

[6] Saussure, vi. 284, &c.

the

the Inn on the N. E. was known by the appellation of the Helvetian Alps. Some writers admit of more minute divisions, as the Tridentine Alps above Trent; and the Noric Alps about the source of the river Tajamento. The extent of this vast course of mountains may be computed at about 550 British miles.

The central part of this magnificent chain may be considered as divided into two ridges, running almost parallel from the south west to the north east. The first ridge is that of the Helvetian Alps, of which the most conspicuous summits are the Gemmi, or Guemmi, the Schelenhorn, the Blumlis, the Geisshorn, the Jungfrau, or Virgin horn, the Eiger, the tremendous Schreckhorn, or peak of terror, the Grimsel, the Furca; the extensive and somewhat devious ridges of mount St. Gothard, the Badur, and the glaciers to the north of the further Rhine. Of this chain the St. Gothard has been long considered as one of the principal summits, because important rivers run from its vicinity in every direction, but this circumstance cannot be admitted to argue for its superior height, after the accurate observations of Saussure; and rivers often spring from an inconsiderable elevation, passing in the bottoms between high mountains. The celebrated naturalist of Geneva has chiefly confined his observations to the southern chain of the Alps; and the best account of the northern chain appears to be that communicated by M. Wyttenbach to Mr. Coxe[7]. The Jungfrau seems the most elevated mountain of this chain; and to the west are the inaccessible peaks called Gletscherhorn, Ebenfluh, Mittaghorn, Grossherhorn, Breithorn. Next in elevation seem to be the Eiger, and the Schreckhorn: yet some suppose that they yield to the Finster Aarhorn, which is only accessible from the Grimsel*. The summits consist of granite, generally, it is believed, the white; and the sides disclose red slate, and calcareous masses. In general the granite appears in the south; and the calcareous superpositions on the north. The mountain of Guemmi, or the Twins, so called from its two summits, has been described by Bourrit. To the south are large desarts and glaciers; and on the north is the romantic lake of Kandel Steig, whence there is said to have been a passage to Lauterbrun amidst singular glaciers, sometimes resembling magical towns of ice, with pilastres, pyramids, columns, and obelisks, reflecting to the sun the most brilliant hues of the finest gems. Yet according to the latter author[8] this chain is inferior to the southern in height; as Mont Blanc seems one mass of ice, while in the northern chain the ice forms the smallest part.

The southern chain of the central Alps rather belongs to the north of Italy, than to Swisserland. It extends from Mont Blanc and some eminences further to the west,

[7] Swisserland, ii. 309.

* Saussure, vol. vii. p. 193, informs us that Mount Titlis, to the north of Mount Furca, is 10,818 feet above the sea; and that the Schreckhorn, and the Finsteraar, south of the Schreckhorn, are at least 2400 feet higher. If so, these summits are about 13,218 feet, while Mont Blanc is 14,700 French feet: by the measurement of Sir George Shuckborough 15,662 feet English.

The doubts seem to be removed by the maps of Swisserland, by Weiss, sheet 10, in which the heights are stated as follow, in French feet: Yungfrawhorn, 11,085: Monch, 10,879; Eiger, 10, 481; Finster Aar, 11,447; Schreckhorn, 10,773; Wetterhorn, 9,966.

For this northern chain the reader may also consult Bourrit, vol. ii. p. 134, (who observes its course from M. Sanetz to St. Gothard;) and the greater part of his third volume. St. Gothard is of great extent, with many summits, of which the highest is called Petina; and in the east begins a high ridge styled that of Adula, which is succeeded by the Crispalt, forming the southern boundary of the canton of Glarus, (vol. iii. p. 62.) In his opinion, iii. 194, the Schreckhorn is the highest of the Swiss Alps. General Pfeffer, who made a noted model of the northern Alps, computes the height of St. Gothard above the sea at 9075 feet, (Coxe, i. 320.) Mr. Kirwan, Geo. Ess, 213, 217, says that the Finsteraar Horn, Schreckhorn, Jungfrau, &c. are all of granular or primitive limestone; and supposes their height only to exceed 10,000 feet, quoting Helv. Mag. iv. 115, 116; but perhaps the skirts only were examined.

By Col. Crawford's observations, a peak of Himala seen from Patna, exceeds 20,000 feet above Nipal, which is probably 5000 feet above the sea.

[8] Bourrit, iii. 59.

and embraces the great St. Bernard, the Weiseh, mount Cervin, and mount Rosa. Passing to the north of the lakes of Locarno and Como, under the names of Vogelberg, St. Bernardine, Spluger, Albula, Bernini, &c. it stretches into Tyrol* terminating in the Brunner, or Rhætian Alps on the S. of the Inn, if it be not considered as extending even to Salzburg; while the first chain to the N. of that river, divides Bavaria from Tyrol. This second chain has been ably illustrated by Saussure, who first visited the summit of Mont Blanc, the greatest elevation on the ancient continent, being about 14,700 feet above the level of the sea. In his last journey Saussure also visited Mount Rosa, which only yields sixty feet in height to Mont Blanc, being about midway between great St. Bernard and the lake of Locarno, where our maps place a non-existence called Mont Moro, to the N. of Macugnaga in the vale of Anzasca. Yet some affected to doubt whether the tremendous, and hitherto inaccessible heights of the northern chain did not exceed those measured by Saussure; and they certainly present sufficient objects for the ambition of future travellers.

It was reserved for this age of enterprize to disclose the secret wonders of the superior Alps. The enormous ridges clothed with a depth of perpetual snow, often crowned with sharp obelisks of granite, styled by the Swiss horns or needles; the dreadful chasms of some thousand feet in perpendicular height, over which the dauntless traveller stands on a shelf of frozen snow; the glaciers or seas of ice, sometimes extending thirty or forty miles in length; the sacred silence of the scenes before unvisited, except by the chamois and goat of the rocks; the clouds, and sometimes the thunder storm, passing at a great distance below; the extensive prospects, which reduce kingdoms as it were to a map; the pure elasticity of the air exciting a kind of incorporeal sensation; are all novelties in the history of human adventure.

Constitution.] With regard to the constitution of these grand chains we learn from Saussure[9] that the highest summits consist of a large grained granite; the mixture being white opake felspar, greyish, or white semitransparent quartz, and mica in small brilliant scales, thus forming what is called the white granite. The colours sometimes vary; and sometimes hornblend, schorl, garnets, or pyrites, are interspersed. The construction seems to consist of flat pyramids of granite, standing vertically, disposed like the fruit of the artichoke; those of the centre being most upright, while the others bend towards them. These flat pyramids commonly stand, like the grand chains of the Alps, in a N. E. and S. W. direction. Beneath, and incumbent on the granite, especially towards the N. appear large masses of slate; which are followed by exterior chains of high calcareous mountains. The reader, who is desirous of more minute details concerning those magnificent features of nature, may consult the works of Saussure, and other celebrated naturalists, who have written professedly on this interesting topic†.

Forests.]

* The great Glockner, between Tyrol and Salzia, is said to be 12,630 feet. The Ortels in Tyrol has even been computed at 14,000 feet. By other observations the highest mountains in Tyrol are said to be the Plaley Kogel, 9748 Parisian feet above the sea; the Glockner 11,500, the Ortels 12,000. See an estimate of the heights of the mountains in Italy and Germany (rather in Salzburg chiefly,) Monthly Magazine, vol. ix. p. 539.

[9] Tome ii. 334. Saussure sent to Lametherie, at Paris, a specimen of his *Palaiopetre* from the very summit of Mont Blanc. It is compact felspar, fusible by the blow-pipe, mixed with a small portion of steatite.

† Saussure informs us, vii. 278, that the highest rocks of Mont Blanc are granites with little or no mica, but in its stead hornblend, or steatite; and masses of black hornblend with white felspar, but small grained like trap. There also appears petrosilex (rather felsite, or compact felspar), of a pearl grey colour, translucid on the margin, and scaly; it is veined and contains little nests of green hornblend, or rather actinote. The same excellent observer found on the S. E. of Mont Blanc, on the glacier of Miage near Mont Broglia, the celebrated granite of Corsica, in concentric circles of black hornblend and white felspar, with another sort in bands, and another in zigzag. This beautiful rock deserves to be explored by some enterprizing naturalist. In other parts of the Alps, Saussure observed a rock of quartz, mica, and limestone,

Forests.] Of forests there does not appear to be any semblance in Swisserland; and such is the scarcity of wood, and even of turf, that the dung of cows and sheep is often used for culinary fire.

Botany.] Swisserland, from its southern climature and its elevated situation, may be considered with regard to its botany as an epitome of all Europe*. From its low sunny vallies that open upon the Italian frontier, to the higher Alps covered with glaciers and eternal snow, the traveller may experience in succession the climates of Lapland, Germany, France, and Italy. Of maritime plants, on account of its inland situation, it possesses none; and many of those which adorn and perfume the arid tracts of heath in Spain and Portugal, are equally wanting. The swamps of Holland also possess many that are strangers to Swisserland; but those species that delight in the pure invigorating air of the mountains, that drink life and fragance from the dashing torrent, that bend over the margin of the transparent lake, and luxuriate in the sheltered recesses of the overhanging rock, flourish here in a profusion and glow of beauty that cannot be conceived by the inhabitant of Lowland countries.

The spiry pinnacles of rock that rear themselves from among the perpetual snows that overspread the summits of the higher Alps, are almost wholly destitute of vegetation; a few of the crustaceous lichens, and here and there a tuft of *Silene acaulis*, and *saxifraga nivalis*, and *stellaris*, comprise the whole of their scanty flora.

From the very edge of the snow commences a zone of rocky pasturage, the native domain of the bounding chamois, but encroached upon for a few weeks in the height of summer by the sheep; covered with a short barren turf, except where the rills, trickling through, give birth to a more luxuriant vegetation: the effect of the cold is here strikingly displayed, not merely in the plants being all of them truly alpine, but from their being shrunk and condensed into such minute specimens as to require a close inspection to be aware of their vast variety.

Still further from the summits the pasturage becomes more abundant and accessible to the cattle for about forty days at Midsummer: a few of the hardier shrubs begin to make their appearance, and the turf here assumes that truly enamelled appearance that is so characteristic of Swisserland: the more exposed situations offer to the botanist *scutellaria alpina*, *gentiana acaulis*, *globularia nudicaulis*, *pedicularis verticillata*, *bartsia alpina*, *saxifraga cæsia*, and *rosa alpina*, all of them plants of exquisite beauty; *astrantia major*, and *saxifraga rotundifolia* of less ostentatious charms, and several viviparous grasses. In the alpine vallies, and along the course of the torrents, vegetation assumes a more stately appearance; the juniper, the savine, the stone pine, and alder, broken by nature into irregular thickets, diversify the scene; their edges are bordered with *cacalia alpina*, *aquilegia alpina*, *ranunculus aconitifolius*, and *pyrola minor*; the cascades are overhung with bowers of the alpine rose, and snowy *mespilus*; in the clifts of the rocks are tufts of *saxifrages*, *auricula*, and the rare *saponaria lutea*: and the spungy hillocks are eminently resplendent with *rhododendron furrugineum*, *azalea procumbens*, *pinguicula alpina*, and *saxifraga aizoides*.

Below all these, on the declivities of the mountains, commence the forests of larch, of pine, and fir, intermixed here and there with the yew, the mountain ash, and the birch; under their shade are found *pyrola uniflora*, *linnæa borealis*, and other natives of the Scandinavian forests.

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limestone, which he observes is a singular mixture, often found, though unknown to writers on mineralogy. It is abundant in North America.

Sir George Shuckborough's observations on the heights of mountains may be found in the sixty-seventh volume of the Philosophical Transactions, for 1777.

* Haller, Enumeratio Stirp. Helvet. Dr. Smith's Travels.

Among

Among these upper woodlands are the richest meadows of Swisserland, luxuriant with grass and clover, and ornamented with yellow gentian, the white hellebore, *actæa spicata*, *anemone alpina*, and *pulsatilla*, and innumerable other mountain plants.

Where the firwoods cease the subalpine regions begin, diversified with meadows and corn fields, and forests of deciduous trees. The oak, the elm, the beech, the ash, the lime, and the hornbeam are the most prevalent, and the borders of the streams are shaded by poplars and willows. The plants are chiefly those which occur in the north and midland parts of France and Germany. The dry stony places are occupied by *arbutus uva ursi*, *vaccinium vitis idæa*, *cratægus cotoneaster*; in woods are found *daphne gnidium*, *aconitum napellus*, several species of *helleborus* and *convallaria*: and the pastures and hedge sides yield the orange and martagon lilies; the branched *asphodel*, the *iris germanica*, clustered hyacinth, narcissus, and daffodil, with an innumerable multitude of *orchideæ*.

The lowest and warmest situations in Swisserland are the plains and broad vallies of Geneva, of Basel, of the Pais de Vaud, of the Valteline, and La Vallais; in these we meet with numerous vineyards, and the trees and plants of the south of France, and Italy. The walnut, the chestnut, the fig, the pomegranate, the bay, and laurel, Cornelian cherry; *celtis australis*, and *mespilus amelanchier*, are the most characteristic among the trees; the lavender, *cretan origany*; hyssop; *atropa mandragora*; *fraxinella*, rue; several kinds of *cistus*, and *peony*, are some of the chief of the herbaceous plants and lower shrubs. The vallies that open towards Italy contain, besides, a few plants that are not found in the rest of Swisserland; such as the *lilac*, the *caper-bush*, the *almond*, Indian fig; and *American aloe*.

Zoology.] The horses of Swisserland are esteemed for vigour and spirit; and the cattle often attain great size. Among the animals peculiar to the Alps may be first named the ibex, bouquetin, or goat of the rocks; of which a good account with an engraving is given by Mr. Coxe [10]. This animal resembles the common goat; but the horns are extremely long and thick, and of such strength as to save them in headlong descents from the precipices. It is more common on the Italian than on the Swiss Alps. The hair is long, and ash coloured, with a black list along the back. The female is one-third less than the male; and her horns are small, while those of the male are about two feet six inches in length. The bouquetin will mount a perpendicular rock of fifteen feet, at three springs, bounding like an elastic body struck against a hard substance. In the day he seeks the highest summits, but in the night the nearest woods, browsing on aromatic plants and dwarf birch, and in the winter on lichens. His common cry is a sharp short whistle. The chace is rashly dangerous, and exposed to many accidents.

Another singular animal is the chamois, which belongs to the genus of antelope; and is commonly seen in herds of twenty or thirty, with a centinel who alarms them by a shrill cry [11]. The colour is yellowish brown; but they sometimes occur speckled. The food is the lichen, with shoots of pine or fir. The marmot is common in the Swiss mountains. In summer they feed on alpine plants, and live in societies, digging dwellings in the ground for summer, and others for winter. About the beginning of October, having provided hay, they retreat to their halls, where they remain torpid till the spring. The skin of this little animal is used for furs. The marmot may be tamed, and shews considerable docility. The size is between that of the rabbit and the hare.

Among Alpine birds may be named the vulture, called also the golden or bearded vulture. The head and neck being covered with feathers it might be classed with the

[10] ii. 53, &c. [11] Ib. i. 343.

eagles, were it not for the form of the body, and shape of the beak. It inhabits the highest Alps, forming its nest in inaccessible rocks, and preying on the chamois, white hare, marmot, and sometimes on kids and lambs. Among Alpine birds may also be named the red legged crow, and turdus cæruleus. The lakes of Swisserland have few peculiar fish.

MINERALOGY.] The mineralogy of this interesting country is not so important as we might be led to infer from its mountainous nature. Some of the streams wash down particles of gold, as the Rhine, the Emmat, the Aar, the Reuss, the Adda, and the Goldbach [12]. Mines of silver are mentioned, but the places are not specified. Copper and lead are also found; but the chief mines are those of iron in the country of Sargans. In the canton of Bern there are valuable quarries of rock salt *; and it is said that coal and native sulphur are not unknown. But the grand stores of minerals are in Piedmont, and the southern sides of the Alps; as in Hungary they are in the south of the Carpathian mountains; and the richest minerals are also found in the south of the Pyrenees. In ridges running north and south, it is believed the eastern side is generally the most productive. Rock crystal forms perhaps the chief export of Swisserland, being sometimes found in such large pieces as to weigh seven or eight hundred weight. The calcareous parts of the Alps often present beautiful marbles, and good slates are not uncommon. As to granite and porphyry the country may be said to consist of them. Among the Alps are also found serpentines, steatites, asbestos, amianthus; with jaspers, agates, and various petrifactions. Near Chiavana is a quarry of grey lapis ollaris, which has been long wrought into pots of various dimensions, and which will stand the fiercest fire. Among the mineralogic curiosities may be named the adularia, or glassy felspar, on the mountains of Adula already mentioned; and the tremolite, so called from the valley of Tremola near St. Gothard.

MINERAL WATERS.] Of mineral waters the most remarkable are those of Leuk. Scheuchzer, in his third journey, describes the singular warm baths of Fabara, or Pfeffers, in the country of Sargans, to which the visitants passed through a long narrow chasm, by a path extremely dangerous. To the S. E. are the baths of Alvenew, which are sulphureous, and resemble Harrowgate water. As such baths commonly belong to calcareous countries, it is believed that Swisserland cannot boast of many.

NATURAL CURIOSITIES.] To enumerate the natural curiosities of Swisserland would be to describe the country. The Alps, the glaciers, the vast precipices, the descending torrents, the sources of the rivers, the beautiful lakes and cataracts, are all natural curiosities of the greatest singularity, and most sublime description. Of late the glaciers have attracted particular attention; but those seas of ice, intersected with numerous deep fissures, owing to sudden cracks which resound like thunder, must yield in sublimity to the stupendous summits clothed with ice and snow, the latter often descending in what are called avalanches, or prodigious balls, which gathering as they roll sometimes overwhelm travellers and even villages. Nay the mountains themselves will sometimes burst and overwhelm whole towns, as happened in the memorable instance of Pleurs near Chiavana, in which thousands perished, and not a vestige of a building was left: nor are recent instances, though less tremendous, wholly unknown †. The vast reservoirs of ice and snow give birth to many important rivers, whose sources deeply interest curiosity. As an example the account which Bourrit gives of that of the Rhone may be selected. "At length we perceived through the trees a

[12] Busching, xiv. 11.

* Keysler, i. 146, says that the salt works are at Bevieur, Roche, and Paner, in the Pays de Vaud.

† In 1807, the mountain of Rogiberg, or Ragenberg, near Arth, fell with prodigious ruin, and the loss of many lives. A view and description was published at Paris.

mountain

mountain of ice as splendid as the sun, and flashing a similar light on the environs. This first aspect of the glacier of the Rhone inspired us with great expectation. A moment afterwards, this enormous mass of ice having disappeared behind thick pines, it soon after met our sight between two vast blocks of rock, which formed a kind of portico. Surprized at the magnificence of this spectacle, and at its admirable contrasts, we beheld it with rapture. At length we reached this beautiful portico, beyond which we were to discover all the glacier. We arrived: at this sight one would suppose one's self in another world, so much is the imagination impressed with the nature and immensity of the objects. To form an idea of this superb spectacle, figure in your mind a scaffolding of transparent ice, filling a space of two miles, rising to the clouds, and darting flashes of light like the sun. Nor were the several parts less magnificent and surprising. One might see as it were the streets and buildings of a city, erected in the form of an amphitheatre, and embelished with pieces of water, cascades, and torrents. The effects were as prodigious as the immensity and the height; the most beautiful azure, the most splendid white, the regular appearance of a thousand pyramids of ice, are more easy to be imagined than described. Such is the aspect of the glacier of the Rhone, reared by nature on a plan which she alone can execute: we admire the majestic course of a river, without suspecting that what gives it birth and maintains its waters may be still more majestic and magnificent." He afterwards describes the river as issuing from a vault of ice, as transparent as crystal; and illuminated by streams of sunshine darting through apertures in the roof.

In the Vallais, above Siders, the banks of this river are singularly studded with conical hills, sometimes crowned with wood, sometimes with ancient castles. On the north of Swisserland the Rhine, near the village of Neuhausen, descends in a cataract of 40 feet amidst black and horrid rocks. Among the milder charms of Swisserland may be named the lakes; and the small lake of Kandel Steig bears at one extremity the charms of summer, while the other presents the glaciers and pomp of winter. Numerous rills, which descend from the mountains, often fall in cascades of great beauty, among which that of Staubbach is computed at 900 feet, over a rock as perpendicular as a wall [13]. The verdant vales, sometimes bordered with perpetual ice, also delight the traveller; who may be inclined, in these corrupt times, to consider as a natural curiosity the frank and simple manners of the inhabitants.

VALAIS.] The Valais now forms a little independent republic. It is a rich valley, watered by the Rhone, about eighty-five miles in length, and containing about 90,000 inhabitants. The chief town is Sion, formerly the seat of the bishop. On the south of the valley is Mount Simplon, where a noble road has been conducted from France into Italy.

[12] Bourrit, iii. 163.

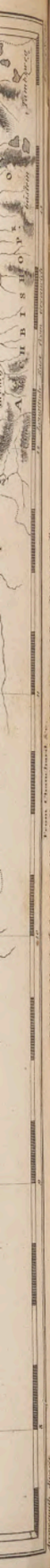
STATES OF THE THIRD ORDER.

THE states of the third order mostly belong to Germany. The new kingdoms of Saxony, Bavaria, Wirtemburg, Westphalia, &c. have totally changed the appearance of Germany, which now may be said to afford only a vast barrier of defence to France. But so many changes happen every day, in the allotments and boundaries of these new kingdoms, and the whole scene has so precipitant an aspect, and seems so dependent upon one or two events, that a longer space of time, and a general peace, and recognizance of the new forms, must be required by any writer who wishes to build for posterity, before he can hazard the alteration of his building by superstructures which perhaps the first gust of wind may destroy.

If in the chain of recent events Italy should become one kingdom, a favourite, and not illaudable object of the ambition of a great modern victor, himself an Italian, it must, from extent and population, not to speak of ancient fame and dignity, assume its position among the principal powers of Europe. But till this change shall have been matured by some duration, and the concurrence of the other European powers, the long established foundations of geographical science must not be rashly sacrificed to changes which may prove of a temporary nature. The description and divisions of Italy are besides so intimately connected with ancient and modern history, that the subjection of the whole to one sovereign would not injure any essential part of the subsequent brief view of this interesting country.

In the present uncertain state of these important countries, this description must be regarded as merely geographical, with little regard to the fluctuating political divisions. And as the chief intention of geography is to serve history, the reader will notice a a far wider field of instruction by just ideas of Germany as it existed for many centuries; while almanacks are the proper repositories of annual alterations.

GERMANY,
South of the Mayn.
Franckfort
Hanau
Rhine R.
Mentz
Mayn R.
Saxenhausen
Aschaffenburg
Darmstadt
Heidelberg
Reinheim
Bs of MENTZ
Manheim
Worms
Weinheim
Spire
Bs of SPIRE
Deux Ponts
Durlach
Besigheim
Pforzheim
Neuenburg
Fort Louis
Rastatt
Baden
Stuttgard
Strasburg
Kehl
Wildberg
Schorndorf
Esslingen
Aalen
Nordlingen
Hohenstatt
Ellwangen
Oettingen
Dinkelsbuhl
Anspach
Nuremburg
Ratisbon
Amberg
Sultzbach
Palatinate
Upper Palatinate
Bohemia
Austria
Passau
Landshut
Munchen or Munich
Augsburg
Ulm
Constance
Basel
Switzerland
Tyrol
Inspruck
Salzburg
Radstadt
Ravensburg
Kempten
Mindelheim
Furstenberg
Hohenzollern
Hohenberg
Nellenburg
Hegau
Thurgau
Landgr of Stuhlingen
Bs of Basel
Bs of Augsburg
Bs of Constance
Bs of Passau
Abp of Salzburg
Abbot of Kempten
Abbot of Weingarten
Abbot of Kaisheim
Abbot of Ochsenhausen
Abbot of Elchingen
Abbot of Roth
Abbot of Irsee
Abbot of Ottobeuren
Abbot of Benedictbeuren
Abbot of Tegernsee
Abbot of Berchtolsgaden
Abbot of Kempten
Abbot of Weingarten
Abbot of Kaisheim
Abbot of Elchingen
Abbot of Roth
Abbot of Irsee
Abbot of Ottobeuren
Abbot of Benedictbeuren
Abbot of Tegernsee
Abbot of Berchtolsgaden
Lake of Constance
Boden See
Lindau
Memmingen
Kempten
Ravensburg
Leutkirch
Waldsee
Biberach
Ehingen
Ulm
Donaueschingen
Freyburg
Rottweil
Tubingen
Reutlingen
Hechingen
Sigmaringen
Meskirch
Pfullendorf
Stockach
Radolfzell
Schaffhausen
Thiengen
Waldshut
Lorrach
Basel
Rhine R.
Danube R.
Lech R.
Iser R.
Inn R.
Salza R.
Elza R.
Traun R.
Mayn R.
Neckar R.
Kocher R.
Jaxt R.
Tauber R.
Murg R.
Nagold R.
Enz R.
Glatt R.
Thur R.
Aar R.
Reuss R.
Limmat R.
Saal R.
Werra R.
Fulda R.
Eger R.
Elbe R.
Moldau R.
Regen R.
Isar R.
Amper R.
Wertach R.
Ilm R.
Abens R.
Laber R.
Vils R.
Rott R.
Alz R.
Traun R.
Ens R.
Mur R.
Drau R.
Etsch R.
Adige R.
Po R.
Ticino R.
Lago Maggiore
Lago di Como
Lago di Garda
Lago di Iseo
Lago di Idro
Lago di Ledro
Lago di Molveno
Lago di Tovel
Lago di Caldonazzo
Lago di Levico
Lago di Lavarone
Lago di Terlago
Lago di Toblino
Lago di Cavedine
Lago di Loppio
Lago di Ledro
Lago di Molveno
Lago di Tovel
Lago di Caldonazzo
Lago di Levico
Lago di Lavarone
Lago di Terlago
Lago di Toblino
Lago di Cavedine
Lago di Loppio



GERMANY,
North of the Mayn.

GERMAN STATES.

CHAPTER I.

GENERAL DESCRIPTION OF GERMANY.

Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs — Antiquities. — Religion. — Population. — Army. — Navy. — Language. — Literature. — Roads. — Face of the Country. — Rivers. — Lakes. — Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

IN describing an extensive country, subdivided into many states, it becomes indispensable to give a general idea of the whole, before the respective territories are delineated. The geography of Germany is the most perplexed of any region on the globe, the great divisions, or *circles*, being now interwoven, and almost antiquated, while no modern and more rational distribution has yet appeared. This observation even extends to the inferior states, many of which are *enclavées*, or mortised in each other *.

EXTENT.] Germany, considered in its modern limits, extends about 600 British miles in length, from the isle of Rugen in the north, to the southern limits of the circle of Austria. The modern breadth, from the Rhine to the eastern boundary of Silesia, is about 500 British miles: anciently the breadth extended beyond the Vistula, about 200 miles more to the east, a space since filled by the Poles, a Slavonic nation.

ORIGINAL POPULATION.] This country appears to have been full of extensive forests, even in the Roman period: and of course to have been in many parts thinly peopled, yet there are faint indications that the Cimbri, or modern Celts, possessed several tracts in the south, as they certainly held a large portion of the N. W. On the N. E. of Germany the Finnish nations are well known to have preceded the incursions of the Goths and Slavons. The Scythians or Goths, proceeding from their original seats on the Euxine, expelled the Cimbri and Fins; and long before the light of history arises had planted colonies in the north of France, whence a part had passed to England, not to mention their southern possessions in Gaul and Spain. The Goths on the Euxine, and the German nations, were the destroyers of the Roman empire in the west; and it is in vain with the weak authors of a fabulous age to trace their origin to Scandinavia, which in the classical period had only detached two colonies, the Jutes or Danes, and the Picts of Scotland.

* The recent changes in Germany will be indicated in a general article at the end, a plan conceived to be more clear and satisfactory than if they had been presented in detached notes or fragments. (1807.)

PROGRESSIVE GEOGRAPHY.] The progressive geography of Germany, though an interesting topic, has never been ably illustrated; and the ancient is obscure, for even D'Anville has been contented to follow the antiquated errors of Cluverius and Cellarius, men of plodding erudition, but destitute of judgment and sagacity, and who have composed maps which have little relation with the grand and immoveable features of nature. It appears that the central parts of Germany were little known to the ancients. The southern and western districts, as bordering on the Roman empire, had been partially explored. Roman ships had navigated the Baltic, and Roman armies had visited the northern course of the Elbe; but the centre and the east, though filled by Ptolemy with many names, must be regarded as nearly unknown, since he errs so widely in the arrangement of mountains and rivers. It would appear that the Roman arms had penetrated nearly in a direction due east, to the nearest circuit of the Elbe near Magdeburg, in which quarter the trophies of Drusus were erected. On the S. the Sudetic mountains, and perhaps the Erzgeberg, seem to bound the knowledge of the ancients; while through the centre of Germany, from the Rhine to the Vistula, extended the vast Hercinian forest, by Hessia, Thuringia, and the north of the Sudetic and Carpathian mountains. The mountain Melebocus of Ptolemy seems to be the same with the Bructerus of others, representing the most northern mountains of Germany those of the Hartz; and the Semana Sylva may also be sought near the course of the Roman army towards Magdeburg. There is reason to believe that Ptolemy, borrowing from various writers, often gives the same nation or tribe, under different names, and thus peoples spaces which would otherwise present a wide blank; so that the most authentic sources of German geography are the writings of Pliny, Tacitus, and other historians.

The interior of this country remained unexplored till the age of Charlemagne, and the northern parts for some centuries after that period. Longer details would not be adapted to the limits of this work; but it appeared essential to indicate some radical errors in the classical geography of a country, whence most of the modern European nations have proceeded.

HISTORICAL EPOCHS.] Some of the grand historical epochs have already been mentioned, in describing those large portions of Germany, the Austrian and Prussian dominions; and some of the others may be briefly hinted in the account of the respective states. Suffice it here to mention: 1. The ancient period chiefly resting on the account of the Roman and Francic historians. 2. The middle period. In the end of the eighth century, Charlemagne having subdued a great part of Germany* and Italy, was in the year 800 proclaimed Emperor of the West. His successor Louis de Debonnaire held the empire with France; but his son Lothaire I. was restricted to Germany. After many intestine commotions Henry duke of Saxony was chosen emperor in 918, the line of Charlemagne having failed six years before. He was followed by his son Otho the Great, 936: and the line of Saxony failing in 1024, was followed by that of Franconia. In the twelfth century arose the factions of the Guelphs and Gibelines, the latter being the partisans of the emperor. Frederic Barbarossa, who ascended the imperial throne 1152, is a distinguished name. Long contests having again arisen, the sceptre was at length assigned to the house of Austria in 1273; and after some deviations continued to remain in that family. 3. The modern period, which may be traced from Charles V., or from his grandfather Maximilian.

ANTIQUITIES.] The antiquities of Germany consist chiefly of a few Roman remains in the S. and W. It would be endless to enumerate the churches founded by Charlemagne; or the numerous castles erected by powerful princes and barons.

* Particularly the Saxons: the southern parts had before been subject to the Franks, and were converted to Christianity.

RELIGION.] The religion of the greater part of Germany may be pronounced to be the reformed, first introduced into Saxony by Luther. Yet the south continues firmly attached to the Roman Catholic faith, now chiefly supported by the house of Austria. The government is that of an aristocracy, which elects a monarch, who may be of any family, Catholic, Lutheran, or Calvinist. To consider the constitution at length, which has been called by a German writer "a confusion supported by providence," would be foreign to the nature of this work; and indeed little interesting, as being an antiquated and inefficacious system, expected speedily to sink under the power of Prussia and Austria*. The work of Putter may be consulted by those who have patience to investigate such objects.

POPULATION.—ARMY.] The population of Germany in general is computed at little more than 25,000,000. It was supposed that the empire could, if united, send forth a contingent army of 400,000; but such calculations are visionary in the present state of affairs. The revenues, political importance, and relations, are now detached, and have already been in a great part considered under the articles of Prussia and Austria. The manners, customs and dialects, vary according to the different states. The Saxon is accounted the purest and most classical idiom of the German tongue; and the southern dialects of Suabia, Bavaria and Austria, the most uncouth. The literature will best be considered under each state; to style an author a German being almost as vague as to call him an European, so distinct are the several states and the shades of civilization. The roads in general are bad; and the postillions noted for insolence and indolence. Most of the other topics can be illustrated with more precision in the account of such states as deserve particular attention.

It will be remembered that in the description of the Austrian and Prussian dominions are contained many of the eastern provinces of Germany. The part which remains is the western half, naturally divided into two portions by the river Mayn. The remaining objects to be generally considered in this western portion are chiefly the aspect of the country, the rivers, lakes, mountains, and forests, with the botany and zoology: other topics being more appropriated to each state.

FACE OF THE COUNTRY.] To the north of the Mayn, Germany chiefly presents wide sandy plains, which seem as if they had been, in the first ages of the world, overwhelmed by the sea. A few hills begin to appear in the neighbourhood of Minden: and in the south of the Hanoverian dominions arise the most northern mountains of Germany, those of Blocksberg, and others in the Hartz. To the S. W. are the mountains of Hessia, and others, extending towards the Rhine: while on the east the rich and variegated country of Saxony, one of the most beautiful and fertile in the empire, extends to the southern limits of the mountains of Erzgeberg, abundant in mines and singular fossils.

RIVERS.] The regions to the south of the Mayn may be regarded as rather mountainous, while our maps represent Germany as one continued plain. Both portions are watered by numerous and important rivers. In the north the Elbe is the most distinguished stream, rising in the Sudetic mountains of Silesia; and, after running south for about 50 miles, it suddenly assumes its destination of N. W., receives the Bohemian Mulda and Eger, the Mulda and Sala of Saxony, and the large river Havel from the east, and enters the sea near Cuxhaven, after a comparative course of more than 500 British miles. The chief cities on the banks of the Elbe are Dresden, Meissen, Wittenburg, Magdeburg, from which it runs almost a solitary stream to Hamburg. The tide is perceived to the height of 22 miles; and, when raised by the north wind, middle sized vessels may

* It has since fallen.

arrive at Hamburg, but they are in general obliged to anchor a mile below the city [1].

Not for to the west is the mouth of the Weser, which first receives that name when its two sources, the Werra and the Fulda, join near Munden in the principality of Calenburg, about 16 British miles S. W. of Gottingen. The Werra springs in the principality of Hildberghausen; and the Fulda in the territories of the bishopric so called; the former having the longest course, and being justly considered as the chief source of the Weser, which thus flows about 270 British miles. The principal towns on this river are Bevern, Minden, and Bremen; the Rhine alone boasting of numerous cities on its banks. The chief tributary stream is the Aller from the duchy of Brunswick. The inundations of the Weser are terrible, the adjacent towns and villages seeming to form islands in the sea: hence the shores are esteemed unhealthy.

The Ems is an unimportant river, which rises in the bishopric of Munster. The sources and mouths of the Rhine have been already described. This noble river forms the grand ancient barrier between France and Germany; and its course may be computed at about 600 British miles. On the German side it is diversified with mountains and rocks; but from Basel to Spire the shores are flat and uninteresting [2]. Near Mentz they become rich, variegated, and grand; and on the confluence with the Mayn the waters are distinguishable for many leagues. The Rhinegau is not only celebrated for its wines, but for the romantic appearance of the country, the river running through wild rocks crowned with majestic castles. Hence as far as Bonn the shores abound with beautiful and striking objects, the Rhine not seeming to assume his grandeur till after his junction with the Mayn [3].

In the southern part of Germany the most important river is the Danube, which according to the common opinion rises near the little town of Doneschingen in Suabia, and Count Marsigli has engraved the springs; but some place the sources a little further to the north *. This noble river becomes navigable a little above Ulm, where it receives the Iler. The next tributary stream of consequence is the Lech, which comes from Tyrol, a stream distinguished in the seat of the recent war; as is the Iser, proceeding from Upper Bavaria. The Danube runs about 250 miles through this part of Germany, passing by Ulm, Ratisbon, and Passau. To Orsova it may be considered as an Austrian river for about 550 miles; thence it is Turkish for 480 to the Euxine.

The Necker is a tributary stream of the Rhine, rising in the Black Forest, not far from the Danube, and running a picturesque course of about 150 British miles through a country variegated with vineyards. Another and grander tributary stream of the Rhine springs from the lake of Fichtel See, on the mountain of Fichtelberg, esteemed among the most elevated parts of Germany, as it gives source to four rivers running in various directions, the Mayn to the W., the Eger to the E., the Sala to the N., and the Nab to the S. This source is called the White Mayn; while another source the Red Mayn, so called from the red clay through which it flows, rises near Hærnleinsreuth, in the principality of Bareuth. The Mayn, after receiving the Rednitz and other considerable streams, joins the Rhine to the S. of Mentz. The Mayn is a muddy stream, but abounds with trout, carp, and other fish. After pervading the rich bishoprics of Bamberg and Wurtzburg, and some territories of the see of Mentz, it waters

[1] Busching, vi. 16, but he forgets to inform us how far the Elbe is navigable by boats or barges. The Oder and Weichel or Vistula have been described in the Prussian dominions.

[2] Gardnor's Views on the Rhine.

[3] Ib. Riesbeck, iii. 261, observes that the hills extend to near Cologne; but lower than those to the south of Mentz. At Cologne end the dominions of the German Bacchus.

* The Brege is in fact the longer current, yet it is said to fall into the Danube.

the walls of Frankfort, formerly a city of celebrated trade; and has recently acquired fresh importance from being considered by German politicians as a natural boundary between the power of Prussia in the N. of Germany, and that of Austria in the S.

LAKES.] To the north of the Mayn, Germany presents few lakes, the largest being in the duchy of Mecklenburg, where the lake of Plau extends under various names about 25 British miles in length by 6 in breadth: that of Schwerin is about 18 miles in length, while that of Ratzburg is 15. Next is one in the county of Diepholtz, and another in the county of Mansfeldt in Upper Saxony. In the more southern and Alpine regions the Boden See, or lake of Constance, is the most distinguished expanse of water, already described under Swisserland. Next is the Chiem See in Upper Bavaria, about 14 British miles in length by five in breadth, sometimes largely styled the sea of Bavaria. That circle, like most mountainous countries, also contains many other lakes of smaller account.

MOUNTAINS.] The most northern mountains in Germany are those of the Hartz, called the Brocken or Blocksberg[4]. These mountains rise in the form of an amphitheatre, the highest being what is called the great Blocksberg; which, (while the others are covered with pines and birch, thus uniting the ancient confusion of forest and mountain,) only presents white stinted brushwood: and the snow sometimes remains till midsummer, and even longer in the northern cavities. On the summit is a small hovel, a retreat for those who ascend. The river Ilse rises from the bottom; and other streams spring from the hills to the N. W. and to the E., which afford many medical herbs. The height of the great Brocken is by the barometer 3021 feet; and the little Brocken 2713.

In Westphalia there are some hills near Minden*; and in the duchy of the same name, bordering on Hessia, are the mountains of Winterberg, Astenberg, Schlossberg, and others[5]. The Hessian territories may be regarded as generally mountainous, especially towards the north. The range of Meisner contains a coal mine, under which is a bed of petrified wood[6]. To the north of Cassel are many high mountains, as the Stauffenberg, the summit of which is called Bartelspopf, and the Gameberg towards Minden. In the Hessian territories are also the *bergs* of Doern, Behren, Schrecklen, Guden, Valken, all in the district of Zieremberg, with many in the S. E. of Felsberg; not to mention the hilly forest of Habichtswald. On the S. of Gotha is the mountainous forest of Thuringia, the chief summits being the Inselberg, of porphyry, 3127 feet above the sea; and the Schneekopf 3313 feet. Thence S. W. towards the Rhine are several considerable hills, among which may be mentioned those in the west of Wettereau, and the seven hills near the Rhine almost opposite to Andernach; with the ridge of Heyrich which protects the vines of Rhinegau. To the east of Frankfort on the Mayn are the hilly forest of Spessart, with the metallic heights of Fulda and Henneberg; and that river springs from the remarkable mountain of Fichtelberg, or the mountain of pines, nearly 22 British miles in length, and 16 in breadth, diversified with desarts, precipices, high rocks, and marshes[7]. The summits have various names, the Ochsenkopf being reputed the highest. The lake called Fichtel See is in a cavity of this mountain, called the See Loh †; but is of little extent, being only remarkable

[4] Busching, x. 251.

* Riesbeck, iii. 117, says that he did not observe one hill from Hamburg to Embden, nor from thence to Hanover; and in Westphalia the heaths are more barren than those of Jutland.

[5] Busch. viii. 8, 9. *Berg* in German signifies a mountain; and is rather a superfluous addition.

[6] Ib. 252.

[7] Busching, ix. 171. Reckoning the German mile of fifteen to the degree, as nearly equal to four British. The French translator of Busching has been very careless in rendering the miles. Riesbeck, iii. 165. describes the Spessart; and p. 199, the view from Alkoniger (about ten miles N. of Frankfort) extending about 50 miles in every direction.

† The German *Loh* or *Loch*, a cavity, is the parent of the Scotish Loch, a lake.

as the source of the White Mayn. Other parts of this memorable mountain give rise to the Eger, which runs to the E., and the Sala and Nab flowing to the N. and S.

But the most celebrated mountains, in that part of Germany which lies to the N. of the Mayn, are the Erzgeberg, or Metallic Mountains, which rise to the N. E. of the Fichtelberg, running between Bohemia and Saxony, but supplying both countries with silver, tin, and other metals. The Erzgeberg are not of remarkable height, yet contain much granite like those of the Hartz and Hessia, with gneiss, in which most of the Saxon and Bohemian mines are found. Granular limestone also appears; and in Upper Lusatia an entire mountain is found of siliceous schistus, while Flinzberg consists almost entirely of milk-white quartz [8]. Misnia contains mountains of pitchstone; and that strong primeval substance called hornblend, which approaches to the nature of iron, is found in mighty strata. In Voigtland, near Averbach, appears the famous topaz rock, consisting of pale topazes in hard lithomarga. Micaceous schistus and slate also form portions of the Saxon mountains; with large masses of trap and basalt, often imbedded in the gneiss, which likewise contains strata of serpentine. Hornblend, slate, and sandstone, both calcareous and siliceous, also contribute to this noted chain. Those of Hessia present nearly the same opulence of primary and secondary substances: and a summit of the Meisner, as already mentioned, consists of basalt resting on coal. In the Hartz, granite also abounds; with porphyry, slate, and other primitive substances *. The metals will be considered in the account of each country.

Among the German mountains to the S. of the Mayn may first be named the Bergstrass, a ridge passing from near Manheim to the vicinity of Frankfort, and accompanied by a high way commanding prospects of wide extent. On the east are the high hills of Odenwald †. Further to the S. are the mountains of Wurtemburg, rising both on the E. and W. of that extensive duchy. On the W. the mountains form a continuation of those of the Black Forest, which hence proceeds south to the Rhine, being the mount Abnoba of Tacitus, whence he justly derives the source of the Danube; and the Helvetian forest of Ptolemy. The mountains of the Black Forest, in German Schwarzwald, extend from near Neuenburg, in the territories of Wurtemburg, south to the four forest towns on the Rhine [9]. The southern part is called the High, and the northern the Lower forest: the length being about 80 British miles. To the E. the Necker may be considered as a boundary; and the breadth may be computed at about 20 British miles. The eastern part as usual presents a gradual elevation; while the western shows precipitous summits to the inhabitants of Baden and Alsace. The appellation seems to arise from the thick dark forests with which the ascents are clothed. Besides pasturage, the inhabitants (partly ruled by Baden, partly by Wurtemburg,) derive advantage from the resin of the pines, and the timber, of which they make all kinds of utensils. Some parts are cultivated by spreading branches of pine, covered with sod, which being burnt an excellent

[8] Kirwan, Geol. Ess. 174—176.

* At Pohlberg in Saxony basaltic columns rest on gneiss; and those of Stolpe, in the same country, rise without articulation to the amazing height of 300 feet. Kirwan, Geo. Ess. 248—250 In the valley of Plauen are several coal mines; and there is also coal in Halverstadt, a country far to the N. W. Ib. 302—308.

† See the above picturesque passage of Riesbeck, who says, that from the Alkoniger he saw, with the rising sun, the summits of Odenwald and Spessart, appearing at a distance like isles of fire, while the wide intermediate vale was in darkness. On the other hand the prospect extended as far as Donnesberg, in the Palatinate.

[9] Busching, viii. 481. In the *Journal de Physique,* New Series, vol. i. there is an interesting journey of Saussure to examine some extinct volcanos in the Brisgau; and he concludes, p. 355, that volcanos certainly did exist in that country. While the mountains of Vosges are chiefly composed of porphyries, those of Brisgau present petrosilex and granites in a state of decomposition. The highest summit of the Black Forest is Pelchen.

manure prepares the ground for four abundant harvests. A branch of the Black Mountains spreads E. from near Sulz on the Necker towards the county of Œtingen, being more than 60 miles in length. This chain is called the Alb, and sometimes the Suabian Alps. Busching traces this ridge from the N. E. extremity, the source of the Brenz, to the west of the Neresheim, by Wisensteig, where the mountains are highest. Thence they turn N. W. to Guttenberg, and W. to Neiffen, whence they pass by Hohenzollern to the Necker, then bend S. and W. between that river and the Danube. Busching adds, that as this chain rises insensibly at Konigsbronn N. E. so it gradually terminates at Ebingen S. W. The principal summits are in the N. and W. of the ridge; and the forests are chiefly beech, while the open spaces supply pasturage for numerous flocks of sheep.

Of these two extensive ridges of mountains, the Black Forest, and the Alb, a considerable portion pervades the duchy of Wurtemburg; and near Stutgard, the capital, are the mountains of Boysersteig, Weinsteig, and Hasensteig. The constituent parts of these extensive ridges have been little detailed; but a great part is calcareous, as they supply excellent marbles. Near Frudenstadt in the Black Mountains are mines of silver and copper.

The south-east of this portion of Germany is bounded by the high mountains of Bavaria and Salzia or Salzburg; being branches or continuations of the Swiss or Tyrolese Alps, but without general appellations. Ferber says that the high mountains of Bavaria, bordering on Tyrol, are granite; thence, as usual, argillaceous and calcareous in the lower parts[10]. Large pieces of grass-green quartz are found studded with red transparent garnets, and at Munchen or Munich are worked into elegant snuff boxes. Some hills near Regensburg, or Ratisbon, are calcareous; but towards Bohemia they consist of gneiss and granite. Of the Alps of Salzburg an account has been published by Vierthaler, whence it would seem that they exceed in height the Carpathian chain or the Pyrenees, and only yield to the Swiss and Tyrolese Alps. The highest summits are said to be the Sonnenblick, the Ankogel, the Wisbacher Horn, and the Loffler in the Stillupe. Even the next to these in height, the Hohe Nan, or the Hockhorn, is computed at 10,633 feet above the sea; and the Grosse Kogel in Rauris at 9,100; while several others exceed 8,000 feet. The mines of this country are celebrated; and in Zillarthal, or the vale of the river Ziller, on the west, is found the substance called Zillerthite by the French mineralogists*. The chief ridge of the Salzian Alps is on the S. and E. of the country, being an elongation of the grand chain, reaching from Mount Blanc and Mount Rosa along the north of Italy through Tyrol.

Forests.] Considerable remains yet exist of the ancient forests which pervaded Germany. The German word *wald*, corresponding with the old English *weald*, denotes a forest; and such are found in the south of Mecklenburg, continued easterly in different parts of the Prussian dominions; but the timber of Dantzick is supplied by the navigation of the Vistula; and the sandy regions on the S. of the Baltic seem little adapted to vigorous vegetation. The chief forests appear always to have extended along the middle regions of Germany, from the N. W. towards the S. E. The Dromling wald is to the north of Magdeburg; but the Sollinger wald, the woody mountains of Hartz, the Luttenwald, the wide forest of Thuringia, may be said to be connected with the ancient forests of Silesia, hence extending far to the E. through the centre of Poland and Russia. More to the south, in this part of Germany, are the Spessart forest, and others. In the portion south of the Mayn the vast Black Forest, and the woods along the Alb, are continued by others in various parts of Ba-

[10] Tour in Italy, 329.

* The mountains of Zillerthall are chiefly of slate. Kir. 183. But the gold is found in gneiss.

varia.

varia. In general the passion among the grandees for the chace of the wild boar, and other pleasures of hunting, has contributed greatly to the preservation of the forests.

Botany.] As Spain is distinguished by its groves of cork trees and ilex, and Scandinavia by its fir woods, so is Germany remarkable for its deep and almost impenetrable forests of oak: not indeed that this is the invariable characteristic of the country, for in an empire of such great extent, and of so varied a surface, it must needs happen that the native vegetable productions on the shore of the German ocean should differ considerably from those in the recesses of the Black Forest or on the frontiers of Tyrol. There is however on the whole more uniformity than might be expected, and though perhaps few plants are absolutely peculiar to Germany, yet the abundance of some species, and the absence of others, forms a striking feature in the natural history of the empire.

To begin then with the hedges and roadsides, as these are situations that impress on a traveller at least the first, and probably the most durable idea of the flora of a country. It will be remarked that the *lilac* and *syringa*, which with us scarcely ever stray beyond the bounds of the shrubbery, are by no means of uncommon occurrence in the hedges of the north of Germany; the *cornel*, the *sweet briar*, and *cinnamon rose*, are also common. Of the smaller plants the principal are *lesser honeywort; winter cherry; yellow star of Bethlehem; evening primrose;* and *coronilla varia*.

The pastures and edges of woods afford several kinds of iris, especially *Germanica*, *Sibirica* and *pumila*, *campanula bononiensis*, *viola mirabilis*, *gentiana Bavarica* and *spicata:* several umbelliferous plants, as *caucalis carnosa*, and *Ligusticum Peloponnesiacum*, and a number of bulbous rooted plants.

The vegetables of the woods and groves may be divided into the shrubby and herbaceous; to the first belong, besides the common forest trees and shrubs of England, *branched elder; Daphne cneorum*, *prunus mahaleb*, *Mespilus Germanica*, *rosa pendulina*, pendent rose; *Genista Germanica*, *Cytisus laburnum*, laburnum; and *Cytisus nigricans*. Of the latter the most worth notice are *Panicum Germanicum* and *miliaceum*, millet grass; *asclepias vincetoxicum*, *astrantia major* and *minor*, *convallaria maialis verticillatum*, *&c.* lily of the valley, Solomon's seal; clustered hyacinth; martagon lily; *anthericum ramosum;* fraxinella; *asarum Europæum*, monkshood; *helleborus viridis*, hepatica; and *serapias rubra*.

The mountains being inferior in height to those of Swisserland, are destitute of many Alpine plants; among those which they do possess the following are the chief: *stipa pinnata*, feathergrass; *Veronica latifolia*, *globularia vulgaris*, *cynoglossum Apenninum*, *androsace septentrionalis; Gentiana ciliata*, fringed gentian; *Campanula thyrsoidea*, *Sum Hippomarathrum*, *sedum cepæa*, *anemone alpina*, and *arnica montana*.

A few plants also worthy of notice are met with in the cultivated fields and vineyards, such as *heliotropium europæum*, tournesol; *anagallis cærulea*, blue pempernel; *camphorosma Monspeliaca*, *Saponaria vaccaria*, and *dianthus Carthusianorum*, Carthusian pink*.

Zoology.] The zoology of this western half of Germany corresponds so much with that of the Austrian and Prussian dominions, that little need be added. The German horses are generally more remarkable for weight than spirit. The German wild boar is of superior size; and those of Westphalia are in particular estimation. In the N. of Germany the lynx is sometimes seen; and the wolf is not unknown in the south.

* Roth, Flora Germanica—Schrader, Spicileg. Flor. Germ.

CHAP-

CHAPTER II.

The chief German States on the North of the Mayn.

Saxony. — Brunswick Lunenburg. — Hessia. — Mecklenburg. — Duchy of Brunswick. — City of Hamburg. — Smaller States. — Ecclesiastic Powers.

Saxony, &c.] IN this division of Germany the elector of Saxony must be regarded as the chief potentate, his territories being computed at 11,680 square miles, the inhabitants at 1,896,000*, and the revenue at 1,283,333l. sterling. The name is derived from the ancient nation of the Saxons, who in the middle ages held the greatest part of the N. and W. of Germany, and extended themselves thus far over Thuringia, towards the territories of the Lusitzi, a Slavonic tribe who gave name to Lusatia, and were repelled by Henry the Lion duke of Saxony in the twelfth century. It is not a little remarkable, as D'Anville' observes, that Witikind of Corvey, and Adam of Bremen, assert that the Saxons, with whose assistance Thieri king of Austrasia conquered Thuringia in 531, came from Great Britain, having landed at Hadeler between the Weser and the Elbe. This tradition seems to have been preserved by the people, as it is also reported by Eginhard, who had particular opportunities of information.

Historical Epochs.] The countries comprised in the electorate of Saxony are, the duchy so called in the north, and Voigtland in the south; Lusatia in the east, and part of Thuringia in the west; with part of Misnia and Henneberg: being in length from E. to W. about 220 British miles, and in breadth from N. to S. about 130. The ancient dukes of Saxony sprung from the kings who defended themselves with such valour against France. Otho III. duke of Saxony became Emperor in 936, and resigned Saxony to the house of Stubenskorn or Billing, which ended in 1106; and soon after this potent dukedom passed by marriage to the house of Bavaria. Henry the Lion, duke of Saxony and Bavaria, 1139--1180, was of distinguished valour and power. In 1180 the eastern part of Saxony was assigned to Bernard of Ascania, the western half being given to the archbishop of Cologne. Wittenberg now became the usual residence. The house of Ascania ended with Albert III. 1422; and was followed by that of Misnia. Ernest and Albert, sons of Frederic II., divided the territories in 1485, and formed two branches bearing their names. The Ernestine branch of the house of Misnia ruled till 1547, when John Frederic was deposed by Charles V., and the electorate assigned to Maurice of the Albertine branch, in which it continues. In order to gain the crown of Poland, the vain wish of the Saxon electors, Frederic Augustus, 1697, abjured the protestant religion; but neither he nor his successors have attempted to constrain the conscience of their subjects. The electorate suffered greatly by the invasion of the Prussians, in the war of seven years; but has since continued the tranquil and flourishing seat of arts and sciences.

* In 1792, by Hoeck's calculation, there were 2,104,320: and the army 21,576 infantry and 6,180 cavalry, so as including other corps to form a total of 32,000. Revenue (A. D. 1800.) 7,800,000 rix dollars.

' Etats formés, p. 20.

Religion.]

RELIGION.] The religion is the Protestant, which was here introduced by Luther; and there are two bishoprics, Merseberg and Naumburg. The government is, as usual among the German princes, nearly absolute, but conducted with moderation through different councils. Yet there are states general of nobles, clergy, and burgesses, commonly assembled every sixth year to regulate the taxation; and Riesbeck regards the elector as a limited sovereign, as he can issue no laws without the consent of the states. Army, 24,000: and the political weight in this part of Germany next to that of Prussia, with which it is naturally connected, and which it cannot with safety oppose. This beautiful electorate may indeed well be an object of ambition to the Prussian monarchs; but the jealousy of other powers has prevented the conquest.

LITERATURE.] The language and literature of Saxony are the most distinguished in all Germany, most of the writers who have refined the language having been born, or having resided in this country, as Gottsched, who first introduced a superior style, and many others. Leibnitz, Wolf, and other philosophers were born or resided in Saxony; among the artists may be named Mengs, Hasse, and Luck. Leipsig is a celebrated mart of German literature. There are many schools, colleges, and academies; among the latter the mineralogic academy of Freyberg, instituted in 1765, is esteemed the leading school of that science.

DRESDEN.] The chief city is Dresden on the Elbe, of celebrated neatness, and about 50,000 inhabitants; but often exposed to the injuries of war *. It is first mentioned about the year 1020; and displays many manufactures, with the palace, and celebrated cabinets, of the elector. Leipsig has nearly 30,000 inhabitants. Wittenberg has suffered greatly by war, particularly in the siege by the Austrians in 1760; and it is now chiefly celebrated as having been the residence of Luther.

MANUFACTURES.] The manufactures of Saxony are thread, linen, laces, ribbons, velvets, carpets, paper, colours derived from various minerals, glass, and porcelain of remarkable beauty, and various works in serpentine stone. The country is also rich in native products, both agricultural and mineral; and beautiful pearls are found in the Elster in shells about six inches long[2]. With such advantages Saxony maintains a considerable inland commerce; and Leipsig is esteemed one of the chief trading towns of Germany.

FACE OF THE COUNTRY, &c.] The climate is so favourable that wine is made in Misnia. The face of the country, especially towards the south, is beautifully diversified with hill and dale; and its richness between Meissen and Dresden is esteemed to rival that of the north of Italy. The land is well cultivated; the products, all kinds of grain and vegetables, with hops, flax, hemp, tobacco, saffron, madder, &c.† Chief rivers, the Elbe, the Saal or Sala, the Mulda, the Pleisse, the Elster, with the Spree of Lusatia; all, except the Elbe and Sala, rising in the mountains between Saxony and Bohemia.

The mountains are those of the Erzegeberg, already described in the general account of Germany; and there are several small forests, supplying fuel for the mines and domestic purposes. The botany and zoology are in general common with the rest of Germany; but the mineralogy is as usual particular, and few countries can boast of such fossil opulence.

MINERALOGY.] The mines of Johngeorgenstadt produce silver, tin, bismuth, manganese, cobalt, wolfram, &c. The other mines are those of Freyberg, Annaberg,

* Mrs. Radcliffe did not visit Dresden; but by her account the praises of the German cities are generally unjust, as they impress an English traveller with the constant idea of darkness, dirtiness, and inconvenience.

[2] Busching, ix. 352.

† See Hoeck's Tables for minute particulars.

Ehren-

Ehrenfriedersdorf, Altenberg, Eibenstock, Lauthenthal, Schneeberg, producing silver, copper, lead, and other metals. At Zwiknau is found the noted terra miraculosa; and at Schnekenstein, near Averbach in the Voigtland, appears the topaz rock, unique in its kind. The tin of Saxony is not only a rare product, but is excellent. Jet is also found; and abundance of fine porcelain clay, with fullers' earth, marble, slate, serpentine, agates, and jasper; but when Busching, and other geographers, add diamonds, jacinths, rubies, sapphires, and opals, they speak in mere ignorance, and only mean as usual limpid or coloured chrystals*. The annual product of the silver mines has been computed, in the German style, at four tons of gold†, and is thought to be rivalled by that of the cobalt converted into smalt or a blue pigment. The tin, copper, lead, and iron, are also very productive. Nor must coal and turf be forgotten among the mineral productions of this remarkable region. Yet Saxony cannot boast of mineral waters: and the chief natural curiosities are, it is believed, to be sought in the mines.

HANOVER.] Next in consequence is the electorate of Brunswick Lunenburg‡, or, as often styled from the capital, the electorate of Hanover, containing about 8224 square miles, with 850,000 inhabitants, and the computed revenue 962,500l. sterling, while the military force is estimated at 20,000§. The various names of this country are wholly derived from the cities. It is situated in the circle of Lower Saxony, and possessed by the descendants of a branch of that great nation called the Ost Fali, or eastern Falians; while another branch to the west gave name to Westphalia.

The countries comprised in the electorate of Hanover are chiefly the duchy of Lunenburg, Bremen, and Verden, and Saxe Lauenburg adjacent to Holstein on the northern side of the Elbe; with the countries of Calenburg and Grubenhagen in the south, and those of Diepholtz and Hoya in the west, and that of Danneberg in the east. The southern territory of Grubenhagen is detached from the rest by the principality of Wolfenbuttel, the bishopric of Hildesheim, and the country of Halberstadt; the first being possessed by the duke of Brunswick, the second by its own bishop, and the third by the king of Prussia, having been transferred to the electoral house of Brandenburg by the treaty of Westphalia, 1648. Hence it may be computed that the compact part of the Hanoverian dominions extends in length, east to west, about 180 miles: and in breadth N. to S. about 100 miles; while the detached duchy of Grubenhagen, with southern Calenburg or the country of Gottingen, is about 80 miles in length by 30 in its greatest breadth.

HISTORICAL EPOCHS.] The electors of Hanover spring from the ancient dukes of Brunswick. Bruno I., margrave of Saxony A. D. 955, enlarged and embellished the city of Brunswick. In 1071 the emperor Henry IV. gave the duchy of Bavaria to Welph, son of Azo of Este, a powerful marquis in Italy, and of Cuniza, heiress of the first Welphs earls of Altorf in Suabia. His grandson, Henry duke of Bavaria, acquired Brunswick along with Saxony. In 1195 William, son of Henry the Lion and of Matilda of England, acquired Luneburg: and his son Otho, 1213, was the first Duke of Brunswick and Luneburg. His son Albert I., 1252, was surnamed the great. Magnus II., 1368, was surnamed Torquatus, from a large chain which he

* At Chemnitz in Saxony, black calcedony appears in porphyry.

In the lordship of Moscau, Upper Lusatia, a white earth is found of which the poor make bread. Buffon Min. iv. 224. It is singular that M. Humboldt, a Prussian, should have regarded the eating of earth as peculiar to South America.

† Or about 40,000l. In 1788 the product of all the mines was valued at 700,639 dollars. Hoeck.

‡ On the continent written and pronounced Lunéburg; the second *n* being added in English merely to give sound to the *e*. The original duchy was annexed to the city of Brunswick and castle of Luneburg, whence the conjunct title. Putter, vol. i. 220.

§ This army consumes most of the revenue. See Hoeck, who computes it at 25,970.

wore. His son Bernard retained Luneburg; while Brunswick passed to Henry the second son, and continued in his descendants till 1634. The dukes of Luneburg acquired some small portions of adjacent territory. Henry being put to the ban of the empire in 1521, was succeeded by his son, who only assumed the title of duke of Zell, a style which continued till the reign of George William, 1665. In 1617 Christian duke of Zell obtained possession of Grubenhagen. In 1692 George William duke of Zell consented that the electorate, instituted in favour of his family, should be conferred on his younger brother, as he had no male heir. Ernest died in 1698, having married Sophia daughter of Elizabeth, daughter of James I. of England. He was succeeded by his son George Lewis, elector, 1698, and king of England, 1714. The later history of Hanover is little remarkable, except by repeated devastations of the French; and in the recent war it was only secured by the powerful interference of the king of Prussia.

RELIGION, &c.] The religion is the Lutheran: there are about 750 parish churches, with seven superintendants. The government is now conducted by a council of regency, and there are provincial states, though rarely summoned. The political importance of this electorate cannot be highly estimated in the present state of German affairs; and from France or Prussia it can only be protected by the powerful mediation of England.

LITERATURE.] The literature of this country has deserved considerable applause, since the institution of the university of Gottingen by George II.: it was founded in 1734, and solemnly opened 1737.

CITIES, &c.] The chief city is Hanover, in the northern part of the principality of Calenburg, situated on the river Leine, amidst numerous gardens and villas. This city is first mentioned in the twelfth century; and is slightly fortified, containing about 15,500 inhabitants. In the new city, on the left of the Leine, is a library, particularly rich in books of history and politics. Gottingen stands on the same river, containing about 7,600 souls, a neat and pleasing town, first mentioned in the thirteenth century. Verden, near the junction of Aller with the Weser, is of small account, but has recently sent some vessels to the Greenland fishery under the Hanoverian flag. Other towns are Luneburg, which imparts its name to the electorate; Lauenburg, Zell, with Einbeck and Osterode in the province of Grubenhagen.

The manufactures and commerce of this electorate are pretty considerable, in metals from the Hartz, linen, cotton, some broad cloths, &c. The silver fabrics of Zell are celebrated in Germany. The chief exports are metals, coarse linens, timber, peat, with some cattle and grain.

FACE OF THE COUNTRY, &c.] The aspect of the country is plain, partaking somewhat of the sandy nature of Brandenburg, except in the south, where rise the lofty and picturesque mountains of the Hartz. The agricultural products are wheat, rye, barley, oats, peas, haricots, and pot-herbs of all kinds; with abundance of potatoes, good fruits, flax, hemp, tobacco, madder, &c. Wood abounds both for fuel and architecture, and affording considerable quantities of tar and pitch. Bees are particularly tended. Horses, cattle, and sheep are numerous; and game far from rare.

RIVERS.] The chief river is the Elbe towards the north; and the Weser and Leine on the west; with the Aller and Ilmenau in the centre. Smaller streams are the Loha, the Lutter, the Fuse, with the Siber, which pervades the Hartzwald in the south. There are a few small lakes as that of Diepholtz, and Stinhuder; but none equal in size to those in the adjacent province of Mecklenburg. The Hanoverian dominions contain many small forests, and woods, besides those of the Hartz, already described in the enumeration of the German mountains.

MINERA-

MINERALOGY.] The mineralogy is rich, consisting of silver, copper, lead, iron, cobalt, zinc; with marble, slate, coal, turf, and limestone, the last particularly from the hill of Kalkberg near Luneberg*. Two curious mineral substances, boracite and staurolite, are found, the former in the Kalkberg, the latter at Andreasburg in the Hartz: which region likewise presents several singular features of nature, as the cavern of Blackenburg, the termination of which has never been explored, and the cave of Hamelen†.

Having thus described, at some length, the two chief and leading principalities on the north of the Mayn, a few others, the next in power, may be briefly mentioned; for it would be a vain waste of the reader's attention, and indeed only render his knowledge more confused and imperfect, if even short accounts were attempted of the 300 princes and states which crowd the labyrinth of Germany: princes whose territories under a monarchy would sink into the geographical obscurity of those of a peer or landed gentleman; and states which may be more aptly sought in a gazetteer, or in the minute and laborious pages of Busching, whose chorography of Germany is the most complete part of his work, and may be recommended to the reader who wishes for ample details.

HESSIA.] In this secondary view of the north of Germany the first place must be assigned to Hessia, a country of no mean extent nor fame. Some districts as usual, being assigned to princes of the family, the ruling state is denominated Hesse Cassel, so called from the capital. This territory is about eighty British miles in length, and nearly the same in breadth: miles square, 2,760, with 750,000 inhabitants‡, military force 12,000. The derivation of Hessi from the ancient Catti is arbitrary; and it is now conceived to originate from the river Esse, which runs into the Fulda: but this land was a seat of the ancient Cattians.

This country is generally mountainous; but there are many pleasant vales, sometimes containing vineyards, and fields fertile in corn and pasturage. It abounds in game and fish, and there are many fossils and minerals: the sands of the Eder contain particles of gold; and there was formerly a mine of that metal, but of small account, near Frankenberg. There are also found silver, copper, lead, alum, vitriol, coal, fine clays, with veins of marble and alabaster, and some medicinal waters. Detached parts are watered by the Rhine and the Mayn: the smaller rivers are very numerous.

There are states of three orders, nobles, clergy, and burgesses, from Cassel, Marburg, and other towns. The religion is the reformed, with two or three superintendants.

* In the year 968, the silver mines in the Hartz were first discovered, and worked by the command of the Emperor Otho the great. Boecler *Hist. Sæc.* ix. *et* x. who quotes *Sigebert*, *Dithmar*, and *Otho Frising*. These mines seem therefore to be the very first that ever were opened in the north of Europe; and those of Saxony and Sweden may be regarded as filiations. The mines of Freyberg were discovered towards the end of the twelth century, by a Hartz miner. *Journal des Mines*, No. 61. p. 64.

Jars, ii. 262, says that the mines of the Hartz were discovered in the tenth century by a hunter, who tied his horse to a tree, the animal striking with his feet, having disclosed the mineral. The rock is gneiss. The noted mine of Idria was discovered in 1497 by a peasant; and it would be difficult to name a mine in any part of the world which was not discovered by mere accident. A vein of quartz or spar commonly leads to a mineral, especially if mixed with pyrites. Jars, iii. 197.

In Mr. Raspe's translation of Born's Travels, p. 234, is a curious note on the mountain of Blocksberg in the Hartz, which chiefly consists of grey granite. From p. 239, it appears that the mountains between Saxony and Bohemia chiefly consist of gneiss, and argillaceous schistus.

† The bishopric of Osnabruck in Westphalia may be considered as an appanage of Hanover, adjoining to the county of Diepholtz. By the treaty of Osnabruck, 1648, it was decided that this bishopric should be possessed alternately by a catholic and a protestant, the former at the choice of the chapter; but the latter always a prince of the house of Hanover, who was to have the civil and criminal superiority; while the ecclesiastic affairs are administered by the archbishop of Cologne. Inhabitants about 120,000: revenue 26,250l.

‡ Hoeck says 700,184, including Hess-Darmstadt.

The universities are those of Marburg and Rinteln, and that of Giessen belonging to Hesse Darmstadt, ruled by another branch of the family. There is some trade from the natural products, and a few manufactures of linen, cloth, hats, stockings, &c. The chief city is Cassel, which contains about 22,000 inhabitants, and is pleasing, though often injured by war*; the Hessians being more remarkable for exposing their lives abroad, than for a vigorous defence of their native country. Hanau is also a considerable place; and the country so called is supposed to contain 100,000 souls.

MECKLENBURG.] The duchy of Mecklenburg is supposed to contain 4,800 square miles, with 375,000 inhabitants, or by Hoeck's account 300,000. It is divided into two parts, known by the additions of Schwerin and Gustro, full of lakes, heaths, and marshes; and the soil being sandy, produces little but rye and oats, yet many parts might be capable of great improvement†. This country was long possessed by the Veneti, or Wends, being the furthest western settlement of that Slavonic nation; and the peasants remain in a state of servitude, as was the case in Denmark, and many parts of Germany.

The states, consisting of nobility and burgesses, are assembled yearly to regulate the taxation. The religion is the Lutheran, with six superintendants; and an university at Rostock.

The manufactures are wool and tobacco; the exports, partly by Lubec, partly by Hamburg, are grain, flax, hemp, hops, wax, honey, cattle, butter, cheese, fruits, feathers, dried geese, tallow, linseed, wool, and timber. The ruling family descends from the old Venedic sovereigns. The branch of Mecklenburg Strelitz began in the end of the seventeenth century, and enjoys Ratzburg, Stargard, and other provinces.

BRUNSWICK.] The duke of Brunswick possesses a territory of 1472 square miles, with 170,000 inhabitants; the chief city being Brunswick, which contains 22,000: but his territory is called the principality of Wolfenbuttel from a town of far less importance. This principality affords a specimen of German geography, being itself enchased in the electorate of Hanover, while the bishopric of Hildesheim, and the country of Halberstadt pervade the centre of Wolfenbuttel.

The duke of Brunswick shares a part of the Hartz, and its important mines‡: and the rest of the country resembles the electorate of Hanover. Here is a rich convent of Nuns at Gandersheim of the Lutheran persuasion, the abbess being generally a princess of the family. There are several small manufactures; and the strong beer of Brunswick, called mum, is exported from Hamburg. The electoral family, and the dukes of Brunswick, alike spring from Magnus the pious, 1463; but the lasting division of the principalites of Brunswick Luneburg, and Brunswick Wolfenbuttel, must be traced from the seventeenth century. The former branch having ascended the English throne, the latter has since that event assumed the leading title of Brunswick.

* The artificial rivers and cataracts of the elector's country palace, Wilhelmshohe, are the first in Europe. Two leagues from Darmstadt is the Felsberg, called the sea of stones, on account of the number of granite pillars, prepared by the Romans for some work. It is a fine grained light grey granite. *Note of Faujas.*

There are mines of silver and copper at Frankenburg, in Hessia. Jars. iii. 87.

Buffon, Mineralogie, i. 484, 4to. informs us that in Hessia, coal is found containing silver; and at Richenstein, in Silesia, gold is sometimes found in the same substance.

† Riesbeck, iii. 69, observes that Mecklenburg is more diversified with woods, lakes, &c. than Brandenburg, though there be no appearance of a hill in either. He says, ib. 123, that from Hamburg to Hanover almost the whole country is a deep sand.

‡ Recently exchanged with Hanover for another district. The clear product of the mines of the Hartz is computed at 453,000 dollars. The dollar may in general be estimated at 3s. 4d., and the florin at 2s. Tables at the end of Putter, &c.

HAM-

HAMBURGH.] Nor must the city of Hamburg be omitted, being after Vienna and Berlin, the third city in Germany, and supposed to contain 100,000 inhabitants, or by Hoeck's account 95,000; while no other, except Dresden and Frankfort on the Mayn, contain more than 30,000. It was fortified by Charlemagne, A.D. 808*. The Elbe is here, including the islands near, a mile broad; and, on the other side of the city, the Alster forms a bason chiefly used in parties of pleasure. The houses are rather commodious than elegant, and there are few fine streets, the population being over-crowded on account of the fortifications, built in the old Dutch taste, with spacious ramparts, planted with trees. It is ruled by a senate of 37 persons, the form being aristocratic. The religion is the Lutheran, and, including the territories of the clergy, amount to 53. There are considerable breweries, and works for refining sugar, with some manufactures of cloth. Formerly the trade chiefly consisted of linens, woollens, wine, sugar, coffee, spiceries, metals, tobacco, timber, leather, corn, dried fish, furs, &c.; but at present it is the great mart of the commerce of the British isles with the continent. The bank was founded in 1619; and the numerous libraries do honour to the taste of the inhabitants. Its chief dependencies are the river of Alster, the bailliage of Ham, some isles, and lowlands on the Elbe; and, besides some districts acquired from Holstein, the bailliage of Ritzbuttel, on the north of the duchy of Bremen, including the port of Cuxhaven, and the isle called Neuewerk, situated opposite to that port. [2]

HANSEATIC LEAGUE.] Hamburg must now be regarded as the chief city of the Hanseatic league, though that honour was formerly ascribed to Lubeck. This celebrated league is one of the most remarkable phenomena in the history of Europe. During three centuries it was the first maritime power, dethroning the kings of Sweden and Denmark, and ruling paramount in the Baltic and German seas.

Towards the middle of the thirteenth century more than sixty towns situated on the Rhine, entered into a perpetual alliance to defend themselves against the tyranny of the nobles, and the general anarchy. The consequence of this alliance was, that by united interest they formed as it were one *Hanse* or Corporation, whence the name of the Hanseatic league. Bremen and Lubeck, already celebrated for their commerce in the northern seas, soon acceded to the alliance, and were followed by Hamburg, several cities in Holland, and on the south of the Baltic. In 1364 there was a solemn assembly of the deputies at Cologne, when the league was consolidated by every art of policy, and even some inland cities were admitted to its participation. This singular republic, without any territory, waged successful war against Denmark, and placed Albert of Mecklenburg upon the throne of Sweden. Norway fell into the vilest subjection, and Bergen may be said to have been garrisoned by the Hanseatic league.

As the commodities brought from the East by the Venetians passed by Tyrol, Swisserland, Bavaria, and Swabia to the Rhine, the security of the highways became another object of the confederacy who contributed not a little to the civilization and improvement of Germany. One of the most important factories of the Hanseatic league was at Bruges in Flanders; and another in London, where it stifled the industry of the nation. In 1551 it was proved, that this factory had exported forty-four thousand pieces of broad cloth, while all the English merchants had only exported eleven hundred. Edward VI. abrogated the privileges, which were restored by Mary; for it is in

* This city, with Lubeck and Bremen, alone retain the Hanseatic league, founded in 1241, and joined by a great number of cities, for the protection of their trade and commerce. This league declined in the end of the fifteenth century. Hamburg is supposed to be the third commercial city in Europe, and is certainly the first in Germany. By the Elbe and its tributary streams it maintains a great inland commerce. See Nugent, i. 49.

From Lubeck, on the river Trave, about 900 vessels sail annually.

[2] Busching, xi. 146-168.

the very nature of the Catholic religion, by the strict observance of ancient habits and practices, to crush all industry. Elizabeth burst the chain, and lent the first spring to English commerce, afterwards widely diffused by the pacific skill of James I. In Scotland there was no factory, but the town of Bremen carried on a precarious trade with that country, amidst repeated piracies and hostilities.

The league still maintained some degree of rigour till the end of the sixteenth century, but the rupture with England and independence of Holland were mortal blows to its preponderance, and in 1630, when a general assembly was summoned to Lubeck, none of the Hanseatic towns sent deputies except to notify their dereliction. Such was the fall of this unexampled confederacy which had often abused its advantages and repaid favour with insult, but which greatly contributed to the diffusion of commerce and the arts of civilization, boasted an opulence superior to that of monarchs, and imparted the first tincture of wealth and ease to the north of Europe, though its effects have strangely escaped the notice of most historians.

At present the Hanseatic League comprizes only three cities, Lubeck, Hamburg, and Bremen; and in the definitive treaty of indemnities, 25th February 1803, they are acknowledged as Hanseatic cities, with the guarantee of their jurisdiction and perpetual neutrality *.

Smaller States.] In this northern half of Germany are also Oldenburg, now a detached principality, possessed by 75,000 inhabitants; Swedish Pomerania, 103,000; the principality of Anhalt, 100,000; the territories of the princes of Nassau, 130,000; of the princes of Schwarzburg in Thuringia, 100,000; the princes of Waldeck, on the north of Hessia, 80,000; the counts of Lippe in Westphalia, 95,000; the counts of Reuss in Vogtland †, which they share with the elector of Saxony, 66,000; and the city of Frankfort on the Mayn 36,000 ‡.

Ecclesiastic Powers.] The other chief powers were ecclesiastic: 1. The elector of Mentz, the first in the empire, has lost his capital city, and Worms on the left bank of the Rhine; but he also held a large territory on the Mayn, with Erfuit, a city of 15,000 inhabitants in the northern region of Thuringia, and the surrounding domain. 2. The elector of Triers, or Treeves, whose extensive dominions, being chiefly on the left of the Rhine, are seized by the French. 3. The elector of Cologne, whose territories are chiefly in the like predicament, but who possessed the province called the duchy of Westphalia. 4. In Westphalia were the bishoprics of Munster, of Osnabruck, and Paderborn; the rich bishopric of Liege is immerged in the French conquests. 5. In Lower Saxony that of Hildesheim. 6. In the Upper Rhine that of

* De la Ligue Hanseatique, par Mallet, Geneve, 1805, 8vo. This new work, by the author of the History of Denmark, is worthy of his former reputation, but a more ample history is wanted. In German there is one by Sartorius, 1802, 3 vols.

† Or the *terra advocatorum*, so called from an office in the empire, which began in the tenth and ended in the fourteenth century, being hereditary in the family of Reuss. Busching, x. 267.

‡ These numbers are now increased as appears from Hoeck, who adds that the imperial city of Bremen has now 40,000 inhabitants, and Lubeck 30,000.

The town of *Papemburg*, which has of late been so frequently mentioned, and which is not to be found in the books of Geography, is situated on the southern frontier of the principality of East Friesland, and the northern frontier of the county of Munster, to the eastward of the Ems, and about 24 B. miles to the south of Embden; and consequently lies, the greatest part in the Prussian territory, and the smallest in that of Munster. It belongs to the Baron of Landsberg Veelen. One hundred and twenty-four years ago, this spot was a marshy waste. One of the ancestors of the present proprietor resolved to settle a colony there, for the purpose of making turf. He accordingly dug a navigable canal from the Ems to the place now called Papenburg, and an abundance of people immediately flocked to inhabit this country. The town contains, at present, two churches, 400 houses, and 3000 souls. It possesses 160 vessels, the largest carrying 160 lasts, and about 100 small craft, which carry turf to East Friesland, Jever, Bremen, and Hamburg. There are 19 yards for ship building, in each of which 12 or 13 carpenters are employed. See Rochette's map of Germany.

Fulda: and 7. The large bishopric of Wurtzburg, in Franconia, was chiefly on the north of the Mayn. The ecclesiastical electorates were computed each at more than 300,000 inhabitants; and the bishoprics from that of Hildesheim, the smallest, 70,000, to Wurtzburg, 200,000. These extensive sees, founded and enlarged by the policy of Charlemagne and his successors, partly for the more speedy and effectual conversion of the pagans in the north of Germany, and partly to balance the rising power of the aristocracy, which afterwards proved so ruinous to the empire, have been recently secularized.

CHAPTER III.

THE GERMAN STATES ON THE SOUTH OF THE MAYN.

Electorate of Bavaria conjoined with the Palatinate.— Duchy of Wurtemburg. —Anspach. — Salzia. — Smaller States. — Ecclesiastic Powers.

AS in the northern division of Germany there were, exclusive of the Prussian dominions, two preponderating powers, the Electors of Saxony and Hanover; so in the southern division, exclusive of Austria, there are two superior potentates, the Elector Palatine and of Bavaria (these electorates being now conjoined), and the duke of Wurtemberg.

BAVARIA AND PALATINATE (1807).] The elector of Bavaria and the Palatinate is the chief of all these secondary powers, his dominions being computed at 16,176 miles square, with 1,934,000 inhabitants*; while those of the duke of Wurtemburg yield as much to those of the elector of Hanover. The French having seized more than half of the Palatinate on the left bank of the Rhine †, a mountainous region, but abounding in mines of quicksilver, and other valuable metals, the remaining part, on the right bank of the river, is about twenty-four British miles in length, by the same at its utmost breadth; but contains the best part of the principality, pervaded by the river Neckar, producing excellent wines, and enriched by the cities of Manheim and Heidelberg.

HISTORICAL EPOCHS.] The first palatine of the Rhine was Eberhard of Franconia, A. D. 925. The Lutheran religion was established in 1556; and in 1563 appeared the famous catechism of Heidelberg: but since 1685 the Catholic system has predominated. In the thirteenth century the house of Bavaria acquired the Palatinate by marriage, and from it the modern family descended. Frederick V., Elector Palatine, 1610, married Elizabeth daughter of James I. of England; and aspired to the crown of Bohemia, but was vanquished, and the electorate transferred to the house of Bavaria. Yet by the treaty of Westphalia, 1648, his son regained a part of his dominions, and was created an eighth Elect or of the Empire. This branch failing in 1685, was succeeded by the collateral branch of Deux Ponts. Wolfgang of Deux Ponts left two sons, Philip and John, the first being the source of the new Palatine dynasty, and the other of the house of Deux Ponts. In 1693 the Palatinate was rendered almost a desert by the notorious ravages of the French. The Palatinate and Bavaria have recently been inherited by the branch of Deux Ponts, the son of the elector being now nominal duke of Deux Ponts ‡.

The

* Hoeck computes Bavaria at 1,339,000, the Palatine at 305,000.

† The elector Palatine has also lost the duchy of Julich, or Juliers. Yet he retained the duchy of Berg, on the right bank of the Rhine, with its noted capital Dusseldorf. Hoeck computes Julich at 192,217; Berg, 261,504 souls. See Render's Tour in Germany, 1 801, 2 vols. ii. 137.

‡ In 1385, Everard, last earl of Deux Ponts, sold the reversion of his domain to the Palatine family. In 1444 it was united with Veldenz. Thus the family of Deux Ponts also spring from that of Bavaria, whose source is Otho of Wittelback, who obtained the Duchy 1180, on the proscription of Henry the Lion, duke of Saxony and Bavaria. Otho, earl of Wittelbach, (a castle in the duchy of Bavaria near Aicha,

The history of Bavaria is yet more important. This country was governed by dukes, under the kings of Austrasia; and in the ninth century princes of the Francic family assumed the style of Kings of Bavaria, while Liutpold, 889, was the first duke; and his progeny extend to the present day, though interrupted in 946, when, Berthold dying without children, the emperor Otho gave Bavaria to his brother Henry of Saxony. In 1071 Welph, son of Azo of Este, became duke of Bavaria; which in 1138 passed to the house of Austria, but in 1154 returned to the house of Welph, in the person of Henry the Lion. In 1180 it finally returned to the first family, by the succession of Otho of Wittelbach, a descendant of Arnolf, second duke of Bavaria, after the family had been unjustly deprived for more than two centuries. The emperors Lewis, 1314, and Charles VII., 1740, were of this family.

EXTENT.] The duchy of Bavaria was divided into Upper and Lower, and what is called the Higher Palatinate (or that of Bavaria). The length from N. to S. is somewhat interrupted, but may be about 150 British miles, and the breadth about 120. Upper Bavaria is, in a great degree, mountainous, and covered with forests, interspersed with large and small lakes. Lower Bavaria is more plain and fertile.

MINERALOGY.] There are mines of silver and copper near Podenmais, in the bailliage of Viechtach, and of lead at Reichenthal, with many quarries of marble, and mineral springs. But the chief mineral riches of Bavaria consist in the salt springs at Traunstein, which pervade mountains of saline earth, like those at Hallen in the archbishopric of Salzburg, and occupy many people in productive industry. There are other springs at Reichenthal[4]. The mountains of Upper Bavaria may be considered as branches of the Alps. The chief rivers are the Danube, the Inn, the Iser, the Lech, and the Nab; and in the Palatinate the Necker.

The religion is the Roman Catholic, which, as usual, damps the spirit of industry; and the manufactures are of small account, the chief exports being corn and cattle. The revenue is computed at 1,166,600l.; and the military force at 12,000: both being greatly inferior to the smaller electorate of Saxony.

The chief city is Munich, esteemed the most elegant in Germany, with 38,000 inhabitants: in Lower Bavaria are Landshut and Strauben. Ratisbon, or Regensburgh, *Regina*, though seized by the elector of Bavaria, 1703, is regarded as a free and Imperial city. In the palatinate of the Rhine is Manheim, supposed to hold 24,000 inhabitants: and Heidelberg, noted for wines, and a capacious tun, and formerly for a valuable library transferred to the Vatican. This city, amidst the infamous destruction of the Palatinate, was reduced to mere walls, but afterwards restored by the industrious Lutherans.

The Bavarians are little distinguished in literature; but are a vigorous race adapted to the fatigues of war. There is however an university at Ingolstadt, and an academy of sciences at Munich. The states consist, as usual, of clergy, nobility, and burgesses;

Aicha, on the Paar, which runs into the Danube to the east of Ingoldstadt,) was descended, in the eighth degree, from Arnolf earl of Scheyren, second son of Arnolf the bad, the second duke of Bavaria, A.D. 907, son of Liutpold the first duke, whose origin has not been ascertained, though the stock of royal families; for in 1654 Christina, the last of the house of Vasa, transferred the Swedish crown to Charles duke of Deux Ponts, her cousin, his father having married Catherine daughter of Charles IX. of Sweden. Of this family were Charles XI. and XII.; and Ulrica who married Frederic prince of Hessia, afterwards king of Sweden; followed in 1751 by the present family of Holstein, sprung from the royal Danish house of Oldenburg.

[4] Voyage d'un Français aux salines de Bavière et de Salzbourg en 1776. Paris an V.; the author is Barbé Marbois.

For the zoology of Bavaria the *Fauna Boica* may be consulted. The Boii were ancient inhabitants of this country, and the *Historia Boiorum* of Aventinus is a history of Bavaria.

but before the accession of the house of Deux Ponts, the administration had become the most lethargic of any in Germany*. Hence its political importance has in some measure declined: and in the dangerous situation between France and Austria, it may be difficult for this power long to preserve a shadow of independence.

WURTEMBURG.] The second potentate in the south is the duke of Wurtemburg, whose dominions are computed at 3,200 square miles, with 600,000 inhabitants. This duchy derives its name from the castle of Wurtemburg, situated in the bailliage of Canstadt. There were earls of Wurtemburg in the twelfth century; and in 1495 the ducal title was conferred on earl Everard. In case of the extinction of the family, the house of Austria pretends to the succession, and even now assumes the title and arms of Wurtemburg. The dukedom of Teck was added in the fourteenth century.

The revenue is computed at 245,000l., the military force at 6000. This duchy forms the most considerable and fertile part of the circle of Suabia; and is indeed, after Saxony, one of the best in the empire. The mountains of the Black Forest on the west, and those of the Alb on the S. and E., not only diversify the face of the country, but supply timber, fuel, and mines. The chief grain is spelt, and some barley, and wheat, with flax, lint, &c. and the fertility suffices even for export. The wines of the Neckar are not so abundant as to prevent the use of cyder.

MINERALOGY.] There are mines of silver and copper near Freudenstadt, and at Konigswart; of silver at Konigstein; and of copper at Guttach, near Hornberg. Iron is also found, but was chiefly brought from mont Beliard, now perhaps lost in the French acquisitions. Cobalt, sulphur, coal, porcelain clay, marble, alabaster, black amber, or rather obsidian, from the Alb, with the salt works at Sulz, constitute the other mineral productions†. There are many warm baths and medical springs, and the chief river is the Neckar, which, with the Nagold, and its other tributary streams, enlivens and fertilises the duchy.

STATES.] The states consist of fourteen superior clergy, and the deputies of sixty-eight towns and bailliages. The religion is the Lutheran, with some Calvinists, and some colonies of the Vaudois. The church is ruled by four superintendants, who are styled abbots, and thirty-eight rural deans: a synod is annually held in the autumn. Education, and ecclesiastical studies in particular, are favoured by laudable institutions, not to be found in any other protestant country. The seminary of Tubingen used to contain about 300 students; and there is an academy of education at Stutgard.

MANUFACTURES.] There are manufactures of pottery, glass, woollen, linen, and silk; which, with the natural products of the country, supply a considerable export: the imports are by Frankfort on the Mayn. The chief city is Stutgard, agreeably situated on a rivulet which flows into the Neckar, and the ducal residence since the year 1321. Some of the buildings are elegant, and there is a cabinet of natural and artificial curiosities. It has not recently suffered much from war, but was greatly injured by a conflagration in 1761. The second town is Tubingen on the Neckar, with an university founded in 1477. The other towns are small, but numerous, and the villages thickly placed in a populous and flourishing country‡.

ANSPACH.]

* By the accounts of Riesbeck, and others, the government of the Palatinate of the Rhine, while detached, was miserable.

† There is a remarkable cavern at Psulingen, and another in the Albian mountains. They are here called *locks*, or *lochs*. Keysler, i. 116.

‡ M. Abeil, ambassador from the duke, now king of Wurtemburg, at Paris, was so good as to communicate to me the following observations, here translated from the French original:

1. "The new map of Suabia, in which the mountains are accurately represented, is published at Tubingen by Cotta.

2. "The

ANSPACH.] Among the secondary powers, in this southern division of Germany, must first be named Anspach, or Onolsbach, which, with Bareuth, maintains a population of 320,000 on 2,320 square miles. These regions are mountainous and sandy; but near the Mayn yield good wine. The chief mines are of iron, the others being neglected. Near the Fichtelberg, Bareuth produces a variety of beautiful marbles, and some curious minerals. The principality of Bareuth is also known by the name of Culmbach; and, with Onolsbach, formed the chief power in Franconia, lately resigned by the sovereign of Prussia *.

SALZIA.] The country of the Salz, also called Salzia, and the archbishopric of Salzburg, is a compact and interesting region, about 100 English miles in length, and 60 at its greatest breadth; computed at 2,880 square miles, and a population of 250,000; by Hoeck's account, only 200,000. The archbishop is primate of all Germany, the see being founded by St. Rupert, an Englishman, in 716 [6]. The chapter consists of twenty-four persons, of noble extract; and the house of Austria has contrived that a great majority should be from her domains. No tax can be imposed without the consent of the provincial states, composed of clergy, nobility and burgesses, the deputies being at the same time the tax-gatherers [7]. In political affairs this see is wholly ruled by Austria, there being twenty-two Austrians in the chapter. The chief suffragans are the bishops of Chiem; of Gurck, and Lavant, in Carinthia; and Seckau, in Stiria; who all swear fidelity to the archbishopric, which possesses many fair lordships in Austria, Stiria, and Carinthia.

Salzburg, the ancient Juvavum, has an university, with about 20,000 inhabitants; the other towns being of little moment. The Roman Catholic system has banished many industrious inhabitants, who have chiefly taken refuge in the Prussian dominions. The salt works at Hallen, about twelve miles S. of Salzburg, are very lucrative. They are in the mountain of Durenburg, which is excavated in galleries, occasionally filled with water, till it be impregnated with saline particles [8]. There are also in Salzia some mines of silver and lead; and one of gold at Gastein, and others along the northern side of the Alps to Zillarthal, so that the archbishopric is supposed by Bergman to yield

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2. "The work which treats of the Roman and other antiquities, of which vestiges are found in the duchy of Wurtemberg, is entitled, 'A Description of the country of Wurtemberg,' by M. Satler, keeper of the ducal archives, 4to, 1760—64.

3. "About twenty years ago the ground was opened near Koengen, at the distance of two or three leagues from Stutgard, and there were found on a hill, which commands the river Neckar, the ruins of a Roman camp or station. A Roman road, which runs along the precipice, was discovered at about the distance of eight hundred or a thousand feet; and along it ruins of a line of houses which seemed to have been destroyed by fire. Among these houses, of which the ground floor is generally pretty entire, a public bath is observable. The houses disclosed may amount to thirty or forty; and there have been found several pretty little statues of bronze, among others a Mercury in a good style; a considerable number of beautiful earthen vessels, great and small; many female ornaments, as bracelets, &c. and no small quantity of coins. These curious relics were preserved in the apartments of the castle of Koengen, but I am not sure if they have since been transported to Stutgard, where there is a cabinet of antiquities. Since the war these researches have been abandoned; and perhaps these curious remains have been demolished by the peasants.

4. "The great Roman road, of which the vestiges appear in the Electoral Forest, five leagues from Munich, passed from Tyrol (Kufstein) to Augsburg (Augusta vindelicorum). In that forest some parts exist of considerable extent, elevated about eight feet above the level of the ground, and composed of earth and pebbles. The breadth, as far as I can recollect, may be about twenty feet; and from distance to distance there are semicircles of a considerable size, perhaps places where the carriages might stop, or rather where soldiers might draw up for their defence."

* In the caverns of Bareuth bones of carnivorous animals have been found, which some suppose to be of an unknown species. It is surprising that they escaped the notice of Faujas in his *Essai de Geologie*. See Playfair's ingenious Illustrations of the Huttonian System, p. 460.

[6] Putter, i. 44. Busching, &c. St. Boniface afterwards founded many bishoprics in the south of Germany. Columban and Gallus were the apostles in Swabia. Kilian in Franconia, Wilibrod in Frisia, were all from England and Ireland.

[7] Barbé-Marbois, p. 101.

[8] Ib. 60. 73.

only to Hungary in the production of this precious metal. The copper is often impregnated with gold, which used to be a source of gain to the melters of Nurenburg. It is said that emeralds and beryls are here found in micaceous schistus. Among the minerals may also be named the *bitter spath*, or muriatic spar, steatite, serpentine, talc, lapis ollaris, asbestos, actinote, sappare, and thallite, or green schorl. The asparagite of Werner is only found in Zillarthal in talc of a greenish white. There are mineral waters in the vale of Grossarl, from a calcareous source as usual; but it is singular that the warm baths of Wildvad, in the valley of Gastein, proceed from rocks of granite and gneiss [9].

Smaller States.] This grand southern division of Germany also contains the territories of the Margraves, now Electors, of Baden, 832 square miles, with 200,000 inhabitants; the lands of Hesse Darmstadt, belonging to another reigning branch of the house of Hessia, residing at Darmstadt, and also possessing territories on the northern side of the Mayn, both estimated under the article of Hessia. The imperial city of Nuremburg has considerably declined, but it still contains about 30,000 souls, while Ulm has not above half the number. Austria enjoyed many extensive territories in Suabia, some even bordering on the Rhine, and several on both sides of the Danube: and these detached provinces were absurdly styled Further Austria. Among the smaller secular territories in that circle, may be named those of the house of Truchsess, so called as being hereditary cup-bearers of the empire, and otherwise styled counts of Waldburg. The counts Fugger, descended from the ancient opulent merchants of that name, possess estates on the west of the Lech. To enumerate other small secular principalities would only obstruct the intention of this description, which is to impress on the memory the more important, which can alone claim notice in the page of history; while the smaller princes may indeed be named as generals, but their territories are beneath the notice of universal geography, and have as little claim to historical regard, as the estates of peers under a monarchy.

Ecclesiastic Powers.] But as the secularization of the numerous and wide ecclesiastical territories in Germany has engaged much political consideration, it is proper to add here, as has been done in the former chapter, a list of the chief sees to the south of the Mayn. 1. The archbishopric of Salzburg, being among the leading powers, has been already described. 2. The large bishopric of Wurtzburg, being chiefly on the north of the Mayn, has been mentioned in the former chapter: the next in importance, but often held in conjunction with the former, was that of Bamburg, supposed to contain 180,000 inhabitants. 4. The bishopric of Speyr, or by the French enunciation Spire, was supposed to contain 50,000, but of these probably one half, on the west bank of the Rhine, are now subject to France. 5. The bishopric of Aichstett in the southern extremity of Franconia. 6. Suabia presented the large and opulent bishopric of Augsburg, with an extent of territory about seventy English miles in length, but the medial breadth not exceeding twelve. 7. Of Constance, whose territories also extend into Swisserland. 8. A great part of the bishopric of Strasburg. 9. The large abbatial territories of Kempten, Buchau, and Lindau; with the priory of Ellwangen in the north. 10. The bishopric of Passau, in Bavaria, was computed at 25,000 inhabitants. 11. That of Freysingen, with the county of Werdenfels, near the Rhætian Alps, at 23,000. 12. The bishopric of Ratisbon, which is of small extent. The chapters of Mentz, Wurtzburg, and Luttich, or Liege, preserved some appearance of freedom; while the others were chiefly influenced by the power of Austria.

For a more minute and particular view of all the German states, including the Austrian and Prussian dominions, than was consistent with the nature of this work, the reader may be referred to the recent laborious publication by Hoeck, who has

[9] Journ. des Mines, No. 47.

carefully

carefully indicated the sources whence he derives his intelligence. It must be added that his work is merely what is called in Germany statistic, being a series of tables presenting the extent of each country and district in square miles, the number of towns, villages, and houses, the population, the natural productions, the manufactures, the commerce, the finances, number of universities and schools, state of the army. The other geographical topics are, by the Germans who invented the term, considered as foreign to the science of statistics.

SUPPLEMENT.

(Written in 1817.)

THE ancient fabric of the German empire, which a German author has called a chaos supported by Providence, has perished amidst the wreck of Europe, and is supplanted by a system more consonant with an enlightened age.

There is no longer an elective Emperor of Germany, but an hereditary Emperor of Austria; and, as election has ceased, so has the title of Elector.

The emperor assumes no preponderance, except from the extent of his territories; and has no more votes in the general assembly of the confederation, than Prussia, Saxony, Bavaria, Hanover or Wurtemberg.

The new kingdoms are Hanover, Saxony, Bavaria and Wurtemberg: two in the north, and two in the south. Between them are several small states, whose existence is preserved, and a portion of the Prussian dominions.

The Grand Duchy of Baden extends a great length along the right bank of the Rhine opposite to France.

Such are the chief features of present Germany. And to watch over the interests of the whole, and protect it from any future invasions or partitions, a Grand Confederation has wisely been formed, of which the intentions and members are thus expressed in the Act of the Congress of Vienna.

"*German Confederation.*

"§ 53. The Sovereign Princes and Free Cities of Germany, comprehending in this transaction the Emperor of Austria, the Kings of Prussia, Denmark, and of the Netherlands; more particularly,

"The Emperor of Austria, and the King of Prussia, for all such of their possessions as formerly belonged to the German empire,

" The King of Denmark for the Duchy of Holstein,
" The King of the Netherlands for the Grand Duchy of Luxemburg,
" Establish among themselves a perpetual confederation which shall be styled the German Confederation.

Its Intentions.

" 54. The intention of this Confederation is the maintenance of the exterior and interior safety of Germany, of the independence and surety of the Confederate States.

Equality of its Members.

" 55. The members of the Confederation, as such, are equal in rights; and equally oblige themselves to maintain the act which constitutes their union.

Federative Diet.

" 56. The affairs of the Confederation shall be entrusted to a Federative Diet, in which all the members shall vote by their Plenipotentiaries, either individually or collectively, in the following manner, without prejudice to their rank.

		Vote.
1.	Austria	1
2.	Prussia	1
3.	Bavaria	1
4.	Saxony	1
5.	Hanover	1
6.	Wurtemberg	1
7.	Baden	1
8.	Electoral Hessia	1
9.	Grand Duchy of Hessia	1
10.	Denmark, for Holstein	1
11.	Netherlands, for Luxemburg	1
12.	Grand-ducal and Ducal houses of Saxony	1
13.	Brunswick and Nassau	1
14.	Mecklenburg-Schwerin and Strelitz	1
15.	Holstein-Oldenburg, Anhalt, and Schwartzburg	1
16.	Hohenzollern, Lichtenstein, Reuss, Schaumburg-Lippe, Lippe and Waldeck	1
17.	The free cities of Lubeck, Frankfort, Bremen, and Hamburg	1
	Total	17

Presidence of Austria.

" 57. Austria shall preside at the Federative Diet. Each state of the Confederation has the right of making propositions, and that which presides is obliged to submit them to deliberation within a time which shall be fixed.

Composition of the General Assembly.

" 58. When it is in question to form fundamental laws, or to make changes in these laws, to take measures respecting the act itself of Confederation, organic institutions, or

or other arrangements to be adopted for the common interest, the Diet shall pass into a General Assembly. In which case the distribution of votes shall take place in the following manner, calculated on the respective extent of the individual states." (In regard to possessions in Germany,)

	Votes.
Austria	4
Prussia	4
Saxony	4
Bavaria	4
Hanover	4
Wurtemburg	4
Baden	3
Electoral Hessia	3
Grand Duchy of Hessia	3
Holstein	3
Luxemburg	3
Brunswick	2
Mecklenburg-Schwerin	2
Nassau	2
Saxe-Weimar	1
—— Gotha	1
—— Coburg	1
—— Meinungen	1
—— Hilburghausen	1
Mecklenburg-Strelitz	1
Holstein Oldenburg	1
Anhalt Dessau	1
——Bernburg	1
——Koethen	1
Schwartzburg Sandershausen	1
—— Rudolstaat	1
Hohenzollern Hechingen	1
Lichtenstein	1
Hohenzollern Sigmaringen	1
Waldeck	1
Reuss, elder branch	1
—— younger	1
Schaumburgh Lippe	1
Lippe	1
Free City of Lubeck	1
—— Frankfort	1
—— Bremen	1
—— Hamburg	1
Total	69

By other articles the order of procedure and of votes is regulated; and the place chosen for the meeting is the central city of Frankfort on the river Mayn.

The States engage not only to defend all Germany, but each state of the Union in case of attack. No state can make a separate peace.

" The confederate States engage likewise not to make war among themselves upon any pretence, and not to pursue their differences by force of arms, but to submit them to the Diet. This shall endeavour by a commission to moderate a mediation. If it do not succeed, and a juridical sentence become necessary, it shall be pronounced by *austregal* judgment * well arranged, to which the litigant parties shall submit without any appeal."

All this is most excellent if the practice correspond with the theory, and may serve with the religious league of Russia, Austria and Prussia, to guarantee the peace of Europe for many centuries, if a Benevolent Providence avouch its protection. Famine and the pestilence are deficiencies of nature, but war is the work of man, the deformity of whose passions is inexplicable, amidst the beauty and harmony of the physical world.

* Austroegal instanz.

ITALY.
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ITALIAN STATES.

CHAPTER I.

GENERAL DESCRIPTION OF ITALY.

Divisions. — Boundaries. — Extent. — Original Population. — Present Population. — Face of the Country — Rivers. — Lakes. — Mountains. — Botany. — Zoology.

THE classical and interesting country of Italy has been so repeatedly described, that it has become familiar even to the common reader. As it is superfluous to write without adding to knowledge, this description shall, in consequence, be restricted to very narrow limits: and will also, of necessity be somewhat abridged by the present unsettled state of the country, which, on many topics, scarcely leaves materials even for conjecture. Hence the political and civil departments of geographical description are almost obliterated; and this brief account shall chiefly delineate those lasting features of nature which no political change can influence.

DIVISIONS.] Italy may be regarded as having been, in all ages of history, divided into three parts, the southern, the central, and the northern. The southern part having received many Greek colonies was honoured with the ancient appellation of Magna Græcia: the centre was the seat of Roman and Etrurian power; while the northern was the Cisalpine Gaul. In the middle ages the kingdom of Lombardy, afterwards subdivided, and that of Naples occupied the two extremities, while the Church and Tuscan states held the centre. In more modern times, the most distinct division has been the kingdom of Naples in the south: but the centre, and the north, have passed into various sub-divisions and denominations. For which reasons, and the present uncertain state of the country, the northern and middle parts shall be considered rather geographically than politically; the chief mouth of the Po being assumed for the limit on the E. thence following that river till it is joined by the Panaro, (the ancient Scultenna,) up to its source near Castiglione; and thence in a westerly line to the gulph of Spetia, thus tracing nearly the boundary between the former states of the Church and those of Modena, while the gulph of Spetia, (Portus Lunensis,) almost the eastern reach of the Genoese territory, presents a natural and remarkable boundary in the west. These divisions shall be briefly considered in the succeeding chapters, while this is dedicated to the general description of Italy.

The boundaries of this renowned country are deeply impressed by the hand of nature, in the Adriatic and Mediterranean seas, and the grand barrier of the Alps, which divide it from France, Swisserland, and Germany. The length of Italy from Mount

Rosa, the highest summit of the Italian Alps, to the Cape de Leuca, is about 670 British miles; while the medial breadth between the Adriatic and Mediterranean is about 100; but from the Adige, the recent limit of Austrian power, to the eastern frontiers of the new French departments of Liman, and Mont Blanc (formerly Savoy) the breadth is about 200 miles. The original population of the south may be regarded as composed in a great part of Greeks, whence the name of Magna Græcia: the northern part of Illyrians, who were succeeded by German Gauls: and the Etruscans of the centre are said to have been of Lydian extract. The Romans seem to derive their origin from the early Greek colonies, and their language was regarded as an Æolic dialect of the Greek: but as they proceeded from the most barbarous part of Greece at an early epoch, it was a considerable time before their manners, rendered ferocious by incessant wars, assumed a tint of Grecian civilization. The successive population, progressive geography, historical epochs, and antiquities of Italy are familiar to every reader, but will occasionally be briefly commemorated in the succeeding chapters. It is almost superfluous to add that the religion is the Roman Catholic. The present population of Italy, with the islands of Sicily, and Sardinia, cannot be estimated at more than 13,000,000[1]. The kingdom of Naples and Sicily contains about 6,000,000: the central part about 3,000,000; and the northern about four. The manners, customs, and dialects are various and discordant, though the general language be the Italian, esteemed the purest in Tuscany, while the enunciation is most perfect at Rome.

Face of the Country.] Italy presents such a variety of scenery, decorated with such noble architecture, and venerable remains of ancient art, amidst a climate generally serene, though liable to violent rains, and such delicious tints of aerial perspective, that the painter of landscape is enraptured, and can render but feeble justice to the picturesque features and glowing hues of nature. In the north the sublime scenery of the Alps is contrasted with the fertile plains, through which many classical streams flow into the Po. In the centre there are many marshes and standing waters. which occasion what is called the *mal aria*, or a pernicious distemperature of the air; but the varied ridge of the Apennines and the beautiful prospects of Florence and Tivoli excite universal admiration. A great part of the kingdom of Naples is mountainous; but the country generally beautiful; yet in addition to the fiery eruptions of Vesuvius, and Etna, it is exposed to the terrible effects of frequent earthquakes; and the enervating sirocco *.

Rivers.] Italy is intersected with rivers in almost every direction, of which the Po is by far the most large and extensive. This noble river, celebrated from the early ages of Grecian mythology, and called by the ancients Padus and Eridanus, rise from mount Vesula, or Viso, on the very confines of France and Italy, nearly in the parallel of Mount Dauphin, in Dauphiné, and Saluzzo, in Piedmont, being almost central between them, at the distance of about eighteen English miles from each. Thus descending from the centre of the western Alps, the Po passes to the N. E. of Saluzzos, by Carignan, to Turin; receiving even in this short space many rivers, as the Varita, Maira, and Grana from the south; and from the N. the Felice, Sagon, and others. Most of these streams having had a longer course than what is called that of the Po, the Maira, for instance, might perhaps be more justly regarded as the principal river: nay the Tanaro, which flows into the Po some miles below Alexandria, might perhaps claim, in the river Stura, a more remote source than the Po itself. After leaving the walls of Turin, the Po receives innumerable rivers and rivulets from the

[1] Boetticher.

* Any pernicious wind is in Italy called *sirocco*, in the south applied to the hot blasts from Africa, in the north to the bleak winds from the Alps.

Alps

Alps in the N. and the Apennines in the S. Among the former may be named the Doria, the Tesino, the Adda, the Oglio, the Mincio: to the east of which the Adige, an independent stream, descends from the Alps of Tyrol, and refusing to blend his waters with the Po pursues his course to the gulph of Venice. From the south the Po first receives the copious Alpine river Tanaro, itself swelled by the Belba, Bormida, and other streams: the other southern rivers are of far less consequence, but among them may be named the Trebbia, the river of Parma, and the Panaro, which joins the Po at Stellato, on the western frontier of the former territory of Ferrara. The course of the Po may be comparatively estimated at about 300 British miles; so that when Busching pronounces it the second river in Europe, after the Danube, he must have forgotten the Rhine,* the Elbe, the Oder, the Vistula, not to mention the Loire of France, the Tajo of Spain, and other noble streams! The numerous tributary rivers, from the Alps and Apennines, bring down so much sand and gravel that the bed of the Po has in modern times been considerably raised, so that in many places banks of thirty feet in height are necessary to preserve the country from inundation. Hence hydraulics have been much studied in the north of Italy; and the numerous canals of irrigation delight and instruct the traveller. Perhaps by deepening the chief estuary, and bed of the river, equal service might have been rendered to commerce. In the middle ages maritime combats took place on the Po, between Venice and some of the inland powers. It is remarkable that, from Cremona to the sea, there is no capital city founded on the main stream of the Po; and the case was the same in ancient times; an exception to the supposition that every river has some grand city near its estuary*.

The other rivers of the north of Italy, as the Adige, the Brenta, the Piavi, and the Tagliamento, scarcely present any singularity worthy of particular notice.

In the centre first appears the Arno, which rises in the Apennines, and flows by Florence and Pisa into the gulph of Genoa. The Tiber, an immortal stream, is by far the most considerable in the middle, or south of Italy, rising near the source of the Arno, S. E. of St. Marino, and passing by Perugia, and Rome, to the Mediterranean, which it joins after a course of about 150 British miles. The Tiber is said to receive about forty-two rivers, or torrents, many of them celebrated in Roman history; as is the Rubicon, a diminutive stream, now the Fiumesino, which enters the Adriatic about eight British miles to the N. of Rimini. In this central part of Italy many small streams flow from the Apennines both to the Mediterranean and Adriatic; but after the Tiber no river can be mentioned in this, or the southern division, whose course deserves the notice of general geography.

Lakes.] Italy contains many beautiful lakes, particularly in the northern division. The Lago Maggiore, Greater Lake, or lake of Locarno, is about twenty-seven British miles in length, by three of medial breadth; and the shores abound with Alpine beauties, receiving the waters of some other lakes, among which must be mentioned that of Lugano on the east. This lake formerly adjoined to the Milanese territory, and contains the beautiful Boromean isles, celebrated by many travellers†. Still further to the east is the lake of Como, which is joined by that of Lecco: the lake of Como is about thirty-two British miles in length, but the medial breadth not above two and a half. Yet further to the east is the small lake of Iseo, which is followed by the noble Lago di Garda, an expanse of about thirty British miles in length by eight in breadth.

* To the N. of Ferrara the Po seems as broad as the Rhine at Dusseldorf, Stolberg, ii. 576: but is probably not above half as deep. Dr. Smith, ii. 360, compares the Po, near Ferrara, to the Maese at Rotterdam, and says it is nearly as wide. That *Maese* is only a *branch* of the Rhine.

† At Arona, where the Tesino joins the lake, is or was the bronze colossus of St. Charles Boromeo, esteemed the largest in Europe. Denina, *Tableau*, p. 139.

In the central part of Italy the largest lakes are those of Perugia and Bolsena, with those to the north of Rieti. Some small lakes are also celebrated, as that of Albano, shaded by trees and rocks, and that of Nemi in the same vicinity, about seventeen miles S. E. from Rome. In the Neapolitan part is the lake of Celano in the north; and that of Varano, near mount Gargano: nor is there any large lake in the southern part, or in the island of Sicily, in which last that of Beverio, near Lentini, is the most remarkable.

MOUNTAINS.] The most important mountains of Italy are the Alps, already in a great measure described, under the article of Swisserland. The maritime Alps rise from the sea to the west of Oneglia, and are succeeded by other denominations, extending due north to Mont Blanc, the ancient boundary of Savoy, and now a French mountain*. The most remarkable passage through the maritime Alps is the Col de Tende. Few summits in this western chain have received particular denominations: the chief are mount Viso, which gives source to the Po; and mount Cenis a noted passage to Turin. Other names are mount Genevre, mount Iseran, Roch Michel†, &c. In general the western Alps rise, in successive elevation, from the sea to mount Blanc. Saussure has explained, with his usual ability, the composition of this chain of the Alps[2]. The calcareous mountains near Geneva, are followed by granitic mixtures of mica and quartz, with argillaceous schistus, and serpentine. From mount Blanc the grand chain of the Italian Alps bends N. E., presenting the high summits of the great St. Bernard, and mount Maudit, Combin, Cervin, and mount Rosa, the last nearly approaching mount Blanc itself in height. In his last volume Saussure has given ample details concerning this vast mountain, which has remained unnoted in the maps, while a fictitious mount Moro has supplied its place. Mount Rosa forms as it were a circus of gigantic peaks, surrounding the village of Macugnaga, a singularity of form strongly contrasting with mount Blanc, and supposed to impart the name from some resemblance to an expanded rose[3]. While mount Blanc, and the adjacent high summits, are composed of vertical strata, the most elevated peaks of mount Rosa are horizontal, or not inclined more than 30°. The structure is equally different; for while mount Blanc consists of vast masses of granite, mount Rosa is chiefly of gneiss, or schistose granite, and other slaty rocks. So various are the great operations of nature, where theory would expect similarity.

From mount Rosa this grand chain continues its progress N. E. by Simplon, &c. through the country of the Grisons to the glaciers of Tyrol, terminating in the Salzian Alps. This chief chain passing through the centre of Tyrol, ought indeed to form the boundary between Germany and Italy; for the Italian Alps, to the north of the former Milanese and Venetian territories, are of comparatively small elevation. Mount Baldo on the east of the lake di Garda, deserves to be mentioned, only on account of its botanical wealth, and literary celebrity; the highest by far of the Italian Alps belonging to the country of Piedmont‡.

The

* The country of Nice has also been seized by the French, and styled the department of the maritime Alps; the highest chain of these Alps, through which is the Col de Tende, forming the exterior boundary of the country of Nice.

† Keysler, i. 202. idly asserts that the Roche Melon, near mont Cenis, is supposed to be the highest of the Italian Alps. It is 11,977 English feet above the sea; while Little mont Cenis is 9956. Smith, iii. 138. Mount Rosa exceeds 15,500. Mont Blanc by Sir G. Shuckborough 15,662; by De Luc 15,304. Denina, 179, asserts that Hannibal must have passed by M. Viso, or M. Genevre. In the text of Polybius, for *Arar*, read Isara. Ib. 380.

[2] Voyage, tome v.

[3] Saussure, viii. 54.

‡ Mr. Strange published at Milan, in 1778, an account of several columnar hills in the north of Italy. He supposes the columnar substance to be sometimes granitic, but it is suspected that he confounded

grunstein,

The next grand chain of Italian mountains is that of the Apennines. While the western Alps branch off on one side into the mountains of Dauphiné*, on the other the Apennines are at first a branch of the Alps, which separates the plains of Piedmont from the sea[4]. Thus the Apennines begin near Ormea, in that high ridge which now forms the boundary of the French department of the maritime Alps, and stretch without any interruption along both sides of the gulph of Genoa, at no great distance from the sea, giving source to many rivers flowing to the north and to the east. In the south of the former territory of Modena, after giving rise to the Panaro, and Reno, they proceed almost due east to the centre of Italy, where they afford sources to the Arno, and the Tiber, and thence pass S. E. to the extremities of Italy, generally approaching nearer to the Adriatic than to the Mediterranean. The noted mount Gargano is as it were, a spur of the Apennines to the north of the gulph of Manfredonia. In general the Apennines may rather be regarded as hills than as mountains. The highest summit is Monte Velino, near the middle of Italy, 7872 feet above the sea: Cimone in the N. is about 6000. Ferber[5] found them to consist, to the S. of Bologna, of stratified grey hard limestone, with a few petrifactions. Yet in the Genoese territory, and Tuscany appear not only the beautiful marble of Carrara, but rich serpentine, here called Gabbro, with steatite and asbestos. What is called granitone is also found, consisting of white felspar and green mica[6]. The territory of Sienna presents some granitic hills, with slate, serpentine, and the noted yellow marble with black veins, found at Montarenti, and many metallic ores; this district being after Piedmont, perhaps the richest mineral region in Italy; but the hills seem rather distinct than connected with the Apennine ridge, from which they are divided by the Chiano, and the Tiber, the most noted of the Siennese hills being Monte Pulciano†.

VOLCANOES.] Having thus briefly considered the chief ridges of Italian mountains, those sublime features of the country, the volcanoes, must not be omitted. They only occur in the southern division, and have recently received scientific illustration from the able and accurate pen of Spallanzani. Vesuvius is a conic detached mountain, above 3600 feet high, but seems chiefly calcareous, like the Apennines, as it frequently ejects marble, calcareous spar, gypsum, and similar substances[7]. The lava, as usual, is generally with a basis of hornblend; a substance which consists in a great degree of iron, is liable to easy fusion with sulphur: and it is sometimes mingled with felspar, quartz, or granite, seemingly ejected from great depths. The terrors of an eruption, the subterranean thunders, the thickening smoke, the ruddy flames, the stony showers ejected to a prodigious height, amidst the corruscations of native lightning, the throes of the mountain, the eruption of the lava, descending in a horrid and copious stream of destruction, have exercised the powers of many writers, but far exceed the utmost energy of description.

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grunstein, which is an impure basalt, with granite. But the granite which he found in the Euganian hills in an orbicular form, plate iv. fig. 6. resembles that of Corsica. Mr. Strange observed in Wales, in the church-yard of Towen, county of Merioneth, not far from Dolgelly, basaltic columns used for tombs, but knew not from whence they came, perhaps from Cader Idris.

* Some would extend this chain to the Pyrenees; but a great and accurate observer remarks, that it is entirely interrupted by the wide plains of lower Provence, and Languedoc. Saussure, v. 222.

[4] Saussure, v. 221.

[5] Italy, 76.

[6] Italy, 250. From Dolomieu's account of the earthquakes in Calabria, Rome, 1784, 8vo. it appears that this part of the Apennines ends in white granite, gneiss, micaceous schistus, and sometimes hornblende.

† There are beautiful variegated alabasters at Volterra, Buffon, Min. i. 274, but some suppose that the finest ancient alabasters came from Spain, which abounds in that substance.

[7] Ferber, 139.

Yet

Yet Vesuvius, placed by the side of Etna, would seem a small ejected hill, the whole circuit of its base not exceeding 30 miles, while Etna covers a space of 180, and its height above the sea is computed at about 11,000 feet[8]. This enormous mass is surrounded by smaller mountains, some of which equal Vesuvius in size; and while the lava of the latter may devolve its stream for seven miles, Etna will emit a liquid fire thirty miles in length. The crater of Vesuvius never exceeds half a mile in circumference, while that of Etna is commonly three, and sometimes six miles. Spallanzani has minutely described the crater of Etna, which many travellers have pretended to visit. It was an oval, extending from E. to W. inclosed by vast fragments of lava and scoriæ; the inner sides being of various declinations, incrusted with orange coloured concretions of muriat of ammoniac. The bottom was a plain nearly horizontal, about two thirds of a mile in circumference, with a large circular aperture, giving vent to a column of white smoke, at the bottom of which was visible a liquid fiery matter, like metal, boiling in a furnace. Such is the height of Etna that the eruptions rarely attain the summit, but more usually break out at the sides. Near the crater begins the region of perpetual snow and ice; which is followed by the woody regions*; vast forests of oak, beeches, firs, and pines, while the upper is almost destitute of vegetation. In this middle region also appear chesnut trees of enormous size; one in particular distinguished by the name *di Cento Cavalli*, the circumference of which has been found to be 204 feet, an amazing phænomenon of vegetation. Dolomieu has published a minute catalogue of all the mineral products of Etna; the lavas being mostly with a basis of hornblend, while many others are compact felspar, the petrosilex of some authors: the ejected stones are granitic or calcareous. Dolomieu asserts that Etna may be said to be surrounded with columns of basalt, which he calls prismatic lava; but Spallanzani[9] observes that he has carefully examined the shore, which is volcanic for nearly 23 miles, "one third of it beginning at Catania, and proceeding to Castello di Jaci, consists of prisms more or less characterized, and such as they have been described by M. Dolomieu; but the two other thirds, though equally composed of lavas with the former, and for the most part falling perpendicularly into the sea, have no such figure; and only present here and there irregular fissures, and angular pieces, such as are generally observable in all lavas, which separate more or less on their congelation†."

The islands of Lipari, to the north of Sicily, also contain many volcanoes, of which Stromboli is the chief. This crater is distinguished from any other by constant momentary eruptions of showers of stones, which, from its position in the side of the hill, are confined, and relapse into the volcano, thus supplying endless materials[10]. The isle called Vulcano presents a most capacious crater; but the materials of eruption seem exhausted. The lava has a base of compact felspar; and Spallanzani here found small prisms of basalt, about a foot in length[11]. The isle of Lipari, containing the town so called, presents vast rocks of volcanic glass; and the hill called Campo Bianco, three miles from the town of Lipari, contains almost all the pumices which

[8] Spallanzani, i. 195.

* The ruined turret, called the Tower of the Philosopher, is well conjectured by M. de Non, p. 67, to have been erected on occasion of the emperor Hadrian's visit to Etna.

Mr. Kirwan, Geog. Ess. 268, says that the lavas of Etna are mostly porphyreous, whence he argues that the basis is porphyry. But these lavas (Dolomieu, 212.) are of hornblende, with crystals of felspar, so that it would be more just to infer that the basis is iron ore.

[9] iii. 204.

† Spallanzani is of opinion that basalt is sometimes formed by fire, and sometimes by water. Other substances also assume the prismatic form, as the columns of red jasper near Dunbar, in Scotland. Some ores of iron also affect it; and the other substances are strongly impregnated with that metal, which seems the real and radical cause of that crystallisation.

[10] Spallanzani, ii. 52.

[11] Ibid, ii. 260—5, &c.

are employed for various purposes in Europe*. Felicuda, and Alicuda, the two extreme Liparian islands towards the west, also display proofs of their having anciently contained volcanoes; and recent authors have discovered similar proofs in the isle of Ischia, and in those of † Ponza, to the north of the gulph of Naples; while that of Capri, to the S. of that gulph, is supposed to be chiefly calcareous.

FORESTS.] There are still some remains of forests in some parts of the Apennines; but the early civilization of Italy seems to have been disadvantageous to the growth of timber. The woods of mount Gargano are celebrated by the ancient classics, and the forests of Etna appear to be extensive.

BOTANY.] It is probable that the botanic treasures of Italy are at least equal to those of any other European country on account of the great variety of its soil, the irregularity of its surface, and the genial benignity of its climate: excepting however Piedmont, which has been ably surveyed by Allioni, the rest of this fine country, especially its southern provinces, has by no means received that degree of notice which it merits: the vale of Enna, the forests of Apulia, the romantic scenes of Calabria, and the warm shore of the Tarentine bay contain a rich harvest for future naturalists, and will no doubt grace the flora of Italy with many new species.

The alpine barrier of the north of Italy, and the long range of the Apennines present a number of plants, inhabitants of the highest mountains, which have already been enumerated in the botany of Swisserland.

The western coast has been perhaps the best explored, and has in consequence been found to be profuse of beauties: the stately *tree-heath* with the two elegant shrubby euphorbias, the evergreen *arbutus*, and the *tamarisk*, mantle over the summits of the cliffs, or bend midway, from them towards the sea: the dryer rocks, and of a more scantys oil, are crowned with the *great aloe*, while their sides are adorned with the *Indian fig*. The stony beach, and the sandy recesses of the bays delight the eye with the snowy blossoms of the *caper bush*, and the glow of *amethystine eryngo*, with the *lavender*, the *rosemary*, the glaucous foliage of the strong scented *rue*, the *tree southern wood*, and the splendid *lavatera arborea*.

The sides of the streams are bordered by the *oleander*, the *myrtle*, the *Cornelian cherry*, and the *Spanish reed*, whose tall jointed stem, and long simple leaves almost emulate the bamboo of India.

The dry heathy tracts of the interior of the country are covered with nearly the same species as characterize those of Spain.

Among the trees, besides the common ones of Britain, we find the *olive*, the *date plum*, the *storax tree*, the *bead tree*, the *almond*, the *pomegranate*, the *azarole plum*, the *pyracantha*, the *carob tree*, the ilex, the *pistachia*, the *manna-tree*, the *cypress*, the *date palm*, the *lemon*, the *orange*, the *fig*, and the *vine*.

Of the flowering shrubs, and lower trees, the principal are the *lilac*, the *jasmine*, and *yellow jasmine*, the *syringa*, the *laburnum*, and *Spanish broom*; the *provence rose*, the *laurustinus*, the *bay*, and the *laurel*.

The sublime ruins of ancient art, and the insulated rocks that often serve them for a base, afford a favourite situation for the *red valerian*, *antirrhinum cymbalaria*, *majus*, and *orontium*, *cneorum tricoccum*, *cotyledon umbilicus-veneris*, and *coronilla glauca*.

In the southern parts *cotton*, *rice*, and the *sugar cane* indicate the fertility of the soil, and the warmth of the climate; and the fields, and pastures, as far as they have been examined, bear a striking resemblance in their native products to those which have been already mentioned, as enlivening the southern provinces of Spain‡.

* The Lipari islands have been ably described by Dolomieu, *Voyage*, Paris 1783, 8vo. He supposes, p. 67, that pumice was originally gneiss, micaceous schistus, or granite.

† See Dolomieu sur les isles Ponces, et catalogue raisonné des produits de l'Etna. Paris, 1788, 8vo.

‡ Allioni Flora Pedemontana.—Turra Flor. Ital. prodromus—Dr. Smith's Travels.

ZOOLOGY.]

Zoology.] The Italian horses are of little reputation. The cows of the Lodizan, where the noted cheese is now made, which was formerly produced near Parma, are described by Mr. Young as generally of a blood red colour, long, lank, and ill made[12]. The same writer observes that though in Tuscany the number of cattle be far inferior to what might be expected, yet the art of fattening oxen is well understood. The buffalo is in Europe almost peculiar to Italy; an animal, though tame, of ferocious aspect, and as different from the bull, as the ass is from the horse. In manners he somewhat resembles the hog, being fond of wallowing in mud, his flesh is coarse, and his hide, though light, is so firm as to have supplied the buff coats, or armour of the seventeenth century. Originally it is supposed from Africa, he is little adapted to any cold climate. The marmot, and the Ibex, are also reckoned among the animals of the Apennines; and the crested porcupine is esteemed peculiar to the south of Italy. Among birds may be mentioned the little falcon of Malta, the certhia muraria, and the turdus roseus, and cyanus, with the alauda spinoletta, and other sorts of land and water fowl. The remaining topics shall be treated under each division.

[12] France, ii. 191.

CHAP.

CHAPTER II.

THE SOUTHERN PART OF ITALY.

Naples and Sicily, with the adjacent Isles.

NAPLES AND SICILY.] THIS division comprises the kingdom of Naples and Sicily; being divided from the central part chiefly by an arbitrary line; nor has nature indeed marked any precise distinction, except some rivers were assumed as boundaries towards the Mediterranean and Adriatic. Sicily is about 170 British miles in length, by 70 of medial breadth: while this part of Italy exceeds 300 miles in length, by 100 in breadth. Square miles 29,824, with six millions of inhabitants.

After the fall of the Roman empire, this part of Italy underwent various revolutions. The powerful princes of Benevento survived the conquest of the north of Italy by Charlemagne; and with other potentates in this quarter acknowledged the supremacy of the Greek empire, from which Sicily had been wrested, A.D. 828, by the Saracens, who possessed it till A.D. 1058.* A pilgrimage to St. Michael of mount Gargano induced the Normans to attempt the conquest, which was gradually accomplished, both Saracens and Greeks being expelled. The Norman leaders became dukes of Apulia, Calabria, and Sicily: and Roger was named king of Sicily by the pope, A.D. 1130. The Norman line continued till their kingdom was subdued by Henry VI. emperor of Germany. After internal contests, Charles of Anjou became king of Sicily, 1266: after the Sicilian vespers, 1282, Sicily was seized by a fleet sent by the kings of Arragon, but Naples continued to acknowledge the line of Anjou, which expired in the infamous Jean 1382. René of Anjou, king of Naples 1435, was the father of Margaret wife of Henry VI. of England: but the French line failed in 1481, in Charles count de Maine, who named Louis XI. king of France his heir, whence the pretension of France to the kingdom of Naples. The Spanish line of Naples and Sicily continued till 1714, when they passed to the house of Austria; but were transferred to that of Bourbon 1736, in the person of Don Carlos duke of Parma and Placentia, son of Philip V. King of Spain, and of Elizabeth of Parma: who succeeding to the crown of Spain 1759, conferred his Italian kingdom on Don Ferdinand his third son, who married the sister of the emperor of Germany in †1768.

* Sardinia was subdued about the same time, and was regained by the Pisans and Genoese in 1016.

To enumerate the antiquities of the Sicilian kingdom would be infinite, as besides those of Herculaneum, there are innumerable remains of Grecian architecture in the S. of Italy, and in Sicily, particularly the grand temple near Girgenti.

† The kingdom of Naples has repassed to its ancient lords. In the translation of this Geography, by a learned Neapolitan, professor Galanti, *Roma*, 1805 — 1810, 8 vols. 8vo. it is to be regretted that the fourth volume, which was to present a new description of Italy, has probably not appeared; else this account would have been enriched with new observations.

The numerous antiquities are known to every reader, particularly those of Herculaneum and Pompeia.*

RELIGION.] Though the religion be the Roman Catholic, the inquisition has been carefully excluded. Few men of distinguished genius have recently appeared in this portion of Italy, which is over-run with priests and lawyers: but among the latter, Giannone has distinguished himself by his spirited history of his country. There are no less than 20 archbishoprics, and 125 episcopal sees; but no university of any reputation. The ecclesiastics are computed at 200,000; and it is supposed that about one half of the lands is in their possession.

The government is nearly despotic. The laws are contained in the Codex Carolinus, published in 1754. The political importance is inconsiderable: but the French have never without great loss penetrated far into Italy, and it is probable that experience will teach them to abstain in future.

The chief city is Naples, esteemed, after Constantinople, the most beautiful capital in the world: the inhabitants are computed at 380,000.† Palermo in Sicily is supposed to contain 130,000. Messina was nearly destroyed by an earthquake, 1783; but Bari is said to contain 30,000 souls, and Catanea 26,000.

Besides excellent wines, oranges, olives, rice, and flax, this kingdom abounds in cattle; and some parts are celebrated for the produce of manna and saffron.‡ Calabria is very fertile in *agrumi*, that is oranges, lemons, limes; but is exposed to violent earthquakes. That of 1783 has been described by Dolomieu: that of 1805 destroyed Isernia, and many other towns. The manufactures, particularly those of silk and woollen, date from the reign of Ferdinand I. of Arragon; and these, with the native products, constitute the chief articles of trade.

Sicily is thought to be the native country of the sugar-cane, indigenous however in the East and West Indies. The papyrus is also found in Sicily, perhaps transferred from Egypt. The mines of Naples are few and inconsiderable, or have at least been little explored: the chief are near Fiume di Nisi in Sicily, where there are mines of antimony; and specimens are found of gold, lead, silver, and copper.§ Iron manufactures have been recently instituted near Naples, but the mines and the agriculture are alike neglected; and Sicily, anciently so fertile in grain, is now of little account.

The revenue is computed at 1,400,000*l.* sterling; and the army at 40,000. There are about four ships of the line and four frigates.

MOUNTAINS.] The mountains have been already mentioned in the general description of Italy, consisting chiefly of the Apennines, which branch out through Apulia to Otranto, and through Calabria to Cape Spartivento.¶

RIVERS.] The rivers are inconsiderable, being chiefly the Garigliano, which under the name of Liri may be traced from near the lake of Celano to the gulf of Gaeta;

* At Pompeia, a Roman house, almost complete, was discovered in 1805.

† Amalfi, about 30 miles S. E. of Naples, was formerly a celebrated city and sea-port, remarkable for the supposed invention of the mariner's compass, and for the discovery of the Pandects of Justinian, A.D. 1137.

‡ The tillage is said to be excellent, Stolberg, i. 459; yet the same author observes that the southern provinces are wholly neglected. § De Non, 402.

¶ But these branches are very low, according to Stolberg. The same author, ii. 131, gives a curious representation of the stone hovels near Trani on the northern shore of Apulia, which greatly resemble what are called the Picts' houses in Scotland.

Mount Scuderi, to the north of Etna, is the highest in Sicily after that mountain, and retains snow all the year. For the mineralogy of Sicily, see the curious book of Ferrara, *I Campi Flegrei*, Messina, from the press of the British army, 1810, 4to. p. 424; or the author's Petralogy, London, 1811, vol. ii. p. 00.

and with the river that flows to Pescara, and that lake, might afford a natural boundary to the north, were a new division of Italy to happen. The Volturno passes by Capua, while the Sangro from an adjoining source runs to the Adriatic. The others are rather rivulets; nor can those of Sicily aspire to a higher appellation, the chief of the latter being the Himera, or Salso, running to the south.

The natural curiosities of these regions are numerous and interesting, independent of the grand volcanic appearances. About six miles from Girgenti, and very remote from Etna, there is a singular volcano, which in 1777 darted forth a high column of potters' earth, of which there are continual ebullitions from about sixty small apertures [2]. The papyrus is only found in the Nile and in the fountain of Cyane, which flows into the river Anapus near Syracuse. Spallanzani has explained the noted wonders of Scylla and Charybdis; the former being a lofty rock on the Calabrian shore, with some caverns at the bottom, which by the agitation of the waves emits sounds resembling the barking of dogs. The only danger is when the current and winds are in opposition, so that vessels are impelled towards the rock. Charybdis is not a whirlpool or involving vortex, but a spot where the waves are greatly agitated by pointed rocks, and the depth does not exceed 500 feet.

The isles of Lipari contain many natural curiosities, as the rocks of volcanic glass, and the spacious cavern in Felicuda called the Grotto of the Sea Ox, which from an aperture of 40 feet high opens into a hall near 200 feet long, 120 broad, and 65 high [3]. This cavern is in lava, and only accessible by sea; and our author supposes that it was occasioned by the action of the gases in the lava, when fluid; as there are examples in Etna of caverns, far more deep, produced by a similar cause. The stoves or warm caves of Lipari have suffered by neglect. The small isles off the gulph of Gaeta also present singular features. While Capri, the Caprea of antiquity and scene of the debaucheries of Tiberius, is calcareous, and seems merely an elongation of the adjoining promontory; the isle of Ischia, to the north, abounds with volcanic substances [4].

Dolomieu has ably described the isles of Ponza, which he observes are inaccurately laid down in the maps, which present isles that do not exist and omit others. About 30 miles to the north of Ischia, and 50 from the Italian shore, is Pendataria, famous for the exile of Julia the daughter of Augustus, now called Ventotiene, with the small isle of San Stephano to the east. The three other Ponzian isles are about 20 miles to the N.W. of these two. Ponza, the largest, is in the middle; a narrow isle, extending from N. E. to S.W. in length about four miles. Palmarola is about four miles to the W. of Ponza, length from N. to S. about three miles, and very narrow. Zanone is about four miles to the N. E. of Ponza, in breadth and length about one mile. In the Adriatic sea, not far from mount Gargano, are the small isles of Tremiti, the Diomedeæ of antiquity. Sicily being an important part of the kingdom has been already considered. To the N. of this great isle, and at a considerable distance from those of Lipari, is the small isle of Ustica, and at a still greater distance from the south Pantalaria.

The isles of Malta and Gozo are of far more consequence, but have been so frequently described that the theme is trivial. These isles are rocky and barren, not producing grain sufficient for half the consumpt of a thin population; but may, in the hands of the English, prove a valuable acquisition. Malta is about 50 British miles in circumference, and is supposed to contain 60,000 inhabitants. The isle of Gozo is about half the extent, and is rather fertile, the population being computed at 3000.

[2] De Non, 240. [3] Spallanzani, iii. 99.

[4] Ferber Italy, 178. See a description of this Isle by Addison in his remarks on Italy. On the opposite shores is found that remarkable stone which when watered produces mushrooms.

CHAPTER III.

THE CENTRAL PART OF ITALY.

Dominions of the Church. — Tuscany. — Lucca. — St. Marino. — Piombino, and the Isle of Elba.

THIS portion comprehended the Dominions of the Church, and the grand duchy, now kingdom, of Tuscany; with a few diminutive states, as the republics of Lucca and St. Marino, the principality of Piombino, and the small portion of territory around Orbitello belonging to the kingdom of Naples.

DOMINIONS OF THE CHURCH, &c.] The territory formerly belonging to the Pope is the chief in extent, reaching from the Po to beyond Terracina, a length of more than 260 British miles: but, on 13,808 square miles, contains little more than two millions of inhabitants. The secular power of the Popes dates from the age of Charlemagne, and the forged collection of papal rescripts, published in the ninth century under the name of Isidorus, led to successive accumulations of dominion. The small territory granted in the eighth century, was encreased by the acquisition of Benevento in the eleventh; after which there was a pause: and the Popes themselves were constrained to reside at Avignon. Hence Dante and Petrarca satirized Rome, not because it was papal, as our reformers conceived, but because it was in opposition to the Popes. In 1513 Bologna was acquired by Julius II.: the marquisate of Ancona followed in 1532: Ferrara, 1598: Urbino, 1626. The Pontiff is elected by the cardinals, a kind of chapter consisting nominally of priests and deacons, but in effect of opulent ecclesiastics, who are elevated to this dignity by their services to the church; by family connections, or by princely recommendation. The nature of the papal power is a bar to industry; and the Popes rarely attempt to restore the country to its former fertility, though Pious VI. made ineffectual efforts to drain the Pontine marshes*. Almost the only exports from the Papal states are a superior kind of alum, prepared from a whitish argillaceous rock at Tolfa near Civita Vecchia; from which place also puzzolana is exported, being yellowish brown ashes, containing particles of iron, whence it forms a strong cement, which might be imitated by mixing filings of iron with mortar†.

ROME.] Rome is supposed to contain 162,800 inhabitants: Bologna (famous for an ancient university) 80,000: and Ancona 20,000. The revenue arising from the papal territory was computed at about 350,600l. sterling; but by exactions in foreign countries was raised to about 800,000l. Yet there was a large debt, bearing eight per cent. interest, a sure proof of the want of industry and prosperity.

RIVERS.] The chief river, as already mentioned, is the Tiber, which running from N. to S. pervades so great a part of the centre of Italy, that this portion might be named Italia Teverina; the southern Italia Volcanica; and the northern Italia

* Count Stolberg allows that the eastern provinces of Urbino, Romagna, and the march of Ancona, are in a high state of cultivation and prosperity. Travels, i. 459. See also Dr. Smith's praise of the country round Loretto, ii. 310.

† Near Ancona are found large stones containing what are called sea-dates, a delicate species of shell fish. Keysler, iv. 41. They are also found in the south of France.

Paduana,

Paduana, from the river Po. The rivers flowing into the Tiber are the Chiano from the west; and the Nera from the east, which receives the Velino from the south: not far to the north of Rome the Teverone joins the Tiber, more noted for beautiful cascades near Tivoli than for the length of its course. The Velino displays a noble cascade of about 300 feet near Terni *.

TUSCANY.] The grand duchy of Tuscany has long been celebrated for the arts; and Florence is regarded as the Athens of modern Italy. This principality is about 120 British miles in length by 90 in breadth; but on 7,040 square miles contains a population of about 1,250,000. Florence long continued a discordant republic, till the house of Medici, originally opulent merchants, obtained the supreme power in the beginning of the fifteenth century. That family becoming extinct, 1737, was followed by Francis duke of Lorrain, who afterwards succeeded the house of Austria in the imperial throne. Francis was followed by his son Peter Leopold, emperor in 1790; whose son Francis became grand duke, and succeeded his father as emperor of Germany in 1792; his brother Ferdinand being appointed grand duke of Tuscany†. The revenue is computed at about half a million sterling, but the forces do not exceed 6 or 8000.

Tuscany is one of the most beautiful and fertile regions of Italy, with a temperate and healthy climate. It abounds in corn and cattle, and produces excellent wines and fruit.

Florence contains about 80,000 inhabitants, and Livorno (corrupted by our mariners to Leghorn) 45,000: the latter, a celebrated port, has supplanted the maritime city of Pisa, now reduced to a population of about 20,000. The manufactures of silk and velvet were formerly celebrated, and still maintain reputation.

The mountains in the Siennese, or southern part of Tuscany, contain valuable ores of antimony, copper which is wrought at Massa, and other metals, with slate and yellow marble. The serpentine of Impruneta, seven miles south from Florence, presents beautiful varieties used in ornamental architecture[1]. The Florentine marble is remarkable for picturesque representations of ruins, &c. caused by the infiltration of iron between the laminæ. The Arno receives many small streams; and the Ombrone is a considerable river which pervades the Siennese.

* Between Bologna and Giogo is the perpetual flame of Pietra Mala, blue in some parts, red in others, and so strong as to enlighten the adjacent hills. La Lande Voyage en Italie, Paris 1786, ii. 379. The ancient name of Bologna was *Felsina* from the Teutonic *fels* a hill. Denina, 289. The same author observes, p. 43, that *Ocellum*, or Oceglio, is from the Teutonic, *Hoch hell*, or high hill. These clear etymons are among the proofs that the Cisalpine Gauls were of German extract.

† Decree for uniting Tuscany to the French empire:—Art 1. The dukedoms of Parma and Placentia are united to the French empire under the name of the department of the Taro: they shall form an inseparable indivisible portion of the French territory, from the period of the notification of the present Senatus Consultum.—2. The states of Tuscany are united to the French empire, under the name of the department of the Arno, the department of the Mediterranean, and the department of the Ombrona. They shall form an indivisible portion of the French empire, from the period of the notification of the present decree.—3. The laws which govern the French empire shall, in the departments of the Arno, the Mediterranean, and the Ombrona, be made public before the 1st of January 1809, the period from which the Constitutional Government for these departments shall take its commencement.—4. The department of the Taro, and that of the Arno, shall each have six deputies in the legislative body; the department of the Mediterranean three; and the department of the Ombrona three; which will raise the number of the members of that body to 342.—5. The deputies of the department of the Taro shall be chosen and named without delay, and shall enter the legislative body before the session of 1809.—6. The deputies of the departments of the Arno, of the Mediterranean, and of the Ombrona, shall enter the legislative body before the session of 1809, &c.

[1] Ferber, 250, &c. At Sienna are curious paintings representing the life of Pope Pius II. Æneas Sylvius.

Borax has been found in the lakes of Tuscany, near Sienna and Volterra.

LUCCA.]

Lucca.] The small republic of Lucca is supposed to contain 120,000 people, on 288 square miles; of which Lucca holds about 40,000. It assumed independence in 1370, the present aristocratic constitution was ratified in 1430; but in the recent revolutions of Italy this state adopted a constitution similar to the French. The Luccanese are the most industrious people of Italy, and no spot of ground is neglected, the hills being covered with vines, olives, chesnut, and mulberry trees, while the meadows near the coast nourish numerous cattle. Oil and silk are the chief exports of Lucca, and their motto is Libertas, a goddess rarely found more amiable than here*.

St. Marino.] The diminutive republic of St. Marino has been celebrated by many able writers. The inhabitants of the village and mountain are computed at 5000. It is surrounded by the dominions of the Pope, and claims his protection. A hermit of the fifth century gave name and existence to this village, which grew up unmolested on the holy ground. In 1739 the miserable ambition of cardinal Alberoni being disappointed in embroiling large states, was directed against this small republic, which he subjected to Rome, but the revenue being inconsiderable its ancient privileges were restored.

Piombino.] The principality of Piombino, consisting of a small portion of the Italian shore, and the opposite isle of Elba, were in the thirteenth century subject to the Pisans; and after several revolutions passed to the family of Appiano, as a detached principality, in 1399. In 1501 it was seized by Cæsar Borgia, but after the death of pope Alexander VI. returned to the house of Appiano. In the sixteenth century the isle of Elba was repeatedly ravaged by the Turks. The principality recently passed to the house of Buoncompagni, that is the dukes of Sora, a Neapolitan family which owes its fortune to the pontiff Gregory XII. Piombino is a small neglected town, the princes having generally resided at Rome.

Isle of Elba.] The isle of Elba, the ancient Ilva, is about nine miles in length, and three in breadth; and has been remarkable from early antiquity for its metallic productions, particularly beautiful ores of iron, often crystallized, and mingled with native Prussian blue. The chief iron mine is that of Rio, worked like a quarry, in the eastern part of the isle; but as there is no water it is smelted near Piombino. This remarkable isle is also said to contain copper, lead, and even tin. Magnet, by the Italians styled calamita, is also found in great perfection; but what is styled white calamita seems to be a different substance. The coast of Campo contains granite, which according to Ferber is of a violet colour. Asbestos and amianthus are also among the productions of Elba. Ferber, himself a Swede, says that the iron ore of Elba is equal to that of Sweden. This isle produces excellent wine, some oil, and flax; but cannot boast of much fertility in grain[2].

* Another small commercial republic, though situated on the eastern shore of the Adriatic, is often considered as an Italian state. Ragusa has a population of about 56,000, on 352 square miles. This state being adjacent to the territory formerly belonging to the Venetians in Dalmatia, imitated the Venetian aristocracy, and was protected by the Turks on condition of paying tribute. The religion is the catholic; and the speech the Slavonic, but most of the inhabitants speak Italian. It is an archbishopric, with six suffragans, and its commerce is considerable, as it supplies the Turks with several kinds of merchandize and ammunition. Ragusa is an ancient city, being the Rausium of the Romans, and in the tenth century had become a metropolis of Dalmatia. In the thirteenth century it was conquered by the Venetians, and afterwards subject for a time to the crown of Hungary. The history of Ragusa may be traced in that of Venice: and its manufactures are still of distinguished beauty. Lucii Dalmat. 49, &c. Busching, iii. 259.

[2] Busching, xiii. 125. Ferber's Italy, 294. Tozzetti, in his travels through Tuscany, supposes Elba to have furnished most of the granite used by the Romans. Vacca in his account of the antiquities of Rome, published by Montfaucon, repeatedly mentions the *marmor granitum Æthaliæ insulæ*, thus indicating the opinion of his time that most of the granite was brought from the Isle of Elba. This interesting island has since been annexed to the French empire.

CHAP.

CHAPTER IV.

THE NORTHERN PART OF ITALY.

Piedmont.—Milan.—Venice.—Mantua.—Parma and Placentia.—Modena.—Genoa.

DESCRIPTION, (1807.) THIS largest division formerly comprised the extensive territories subject to Venice and the king of Sardinia, with Milan and Mantua appanages of the house of Austria, the principalities of Parma and Modena, and the long mountainous strip belonging to the Genoese. But France has seized on Piedmont, Savoy, with the county of Nice, and small principality of Monaco. This part of Italy therefore is now about 200 miles in length, from Carniola to Piedmont, and about 120 in breadth, from the gulph of Genoa to the Swiss frontier. This fertile region was by the French constituted a republic, under the name of Cisalpine, an erroneous application of the ancient name Cisalpine Gaul; as on the contrary the proper appellation, derived, with the projected government, from France, ought to have been the Transalpine, or the Paduan republic, as the country is pervaded and fertilized by the Po*.

PIEDMONT.] The most extensive province of this division is Piedmont, now regarded as a French acquisition, still about 150 English miles in length by 100 of medial breadth. This principality was part of the ancient kingdom of Lombardy, and formed a portion of the gradual acquisitions of the counts, afterwards dukes of Savoy, and latterly kings of Sardinia. While the revenue of Sardinia was estimated at 1,085,000l., Piedmont contributed 953,750l., Savoy 87,500l., and Sardinia only 43,750l. This delightful province enjoys a mild and pure air, and distinguished fertility of soil, the plains producing wheat, maiz, rice, with some olives and wine, and the pasturages abound with cattle. Mr. Young says in general that the soil is a rich sandy loam, with some tracts of large gravel brought down from the rivers; but the heat is excessive in summer, and the winter cold very severe. Yet the silk is esteemed of the finest quality. Keysler mentions the fogs of autumn and winter, rising from the Po and other waters. Around Turin and through a great part of the province, artificial irrigation, or the watering of meadows, is practised with great assiduity and success†.

The surrounding Alps are rich in minerals[1]. The Alpine chain, from St. Gothard to Mount Cenis, is of prodigious height, particularly Mount Rosa, a northern, boundary of Piedmont, and supposed to be the ancient Mons Sylvius; but from Mount Cenis it becomes gradually lower, till the Apennines branch out between

* Piedmont is excluded from this new republic; which on the other hand embraced the papal territories of Ferrara, Bologna and Romagna. The rest of Italy was once the Roman and Neapolitan republics. Venice is now annexed to the kingdom of Italy.

† Denina observes, that the abundance of the market of Turin indicates the surprising opulence of the country. *Tableau de la Haute Italie,* Paris, 1805, 8vo. p. 8. Orgeat is made of the seeds of melons. Ib. 55.

[1] See Memoire de M. Robilant sur la minéralogie de Piémont. Journ. des Mines, No. 50.

In the valley of Susa, Piedmont, there are curious variolites; and green porphyry appears near Mont Viso. *Journal des Mines,* No. 61. *Verde antico* is said to be found at Bussolin near Susa. The region between Aosta and Verrex abounds in a surprizing variety of rocks. Saussure, § 966.

Roja

Roja and Livenza, enclosing this province on the south. Thus numerous streams descend on all hands to fertilize the plains, and the river Orco forms at Ceresoli a vertical cascade, computed at 400 fathoms or 2,400 feet. The torrent Evenson, descending from Mount Rosa, forms about half a mile from Verrez, a fall of more than 200 fathoms or 1,200 feet. Our author even says, that the Orco falls 400 toises or 2,400 feet*! The copper mines in the duchy of Aosta are numerous; and in some places this metal is accompanied with antimony, arsenic, and zinc. In the superior regions near Macugnaga there are mines of gold, found in marcasite and quartz: in the vale of Sesia are the gold mines of St. Maria, and Cavavecchia, also containing silver. Gold is likewise found in the mountains of Challand near the vale of Aosta; and the torrent Evenson rolls down pebbles of quartz, veined with that precious metal. Not far to the east of Mount Blanc, a rich vein of cobalt has been recently discovered; and plumbago or black lead has been observed near the baths of Binay. But it would be infinite to detail the mineralogic opulence of Piedmont, which spreading to the south of the highest Alps, almost rivals the southern side of the Carpathians in Hungary.

The chief city of Piedmont is Turin, supposed to contain more than 80,000 inhabitants, with an university founded in 1405 by Amadeo duke of Savoy†, this city having been subject to the family since A. D. 1097. Vercelli is said to contain 20,000; and Alessandria 12,000: a little to the east of the latter is Marengo, noted for a victory of Bonaparte over the Austrians. The king of Sardinia used to maintain an army of about 40,000. The chief exports consist of silk, which was chiefly manufactured at Lyons, some hemp, and large flocks of cattle.

MILAN.] Next in position, and now in consequence, is the fertile duchy of Milan, said to contain, on 2,432 square miles, a population of 1,116,850. The city of Milan was founded by the Gauls about 584 years before the Christian era: and the inhabitants are computed at about 120,000. After the fall of the kingdom of Lombardy, it became subject to the emperors of the west; but impatient of the yoke, it was severely punished by the emperor Frederic I., 1162; who taking it after a siege of seven months destroyed the gates, ramparts and edifices, except a few churches, and sowed salt on the ruins. Recovering slowly, amid the contests between the emperors and the popes, it however could not assert the form of a republic, but became subject to the archbishop, and to the Torriani. Napoleon Torre opposing Otto Visconti, archbishop of Milan, was defeated in 1277, and the prelate was proclaimed temporal lord of Milan. He was succeeded by his nephew; and the family of Visconti long possessed this opulent principality. In 1368 Yolande daughter of Galeazzo was married to Lionel duke of Clarence, son of the English monarch. This family expired in 1494; and was followed by Sforza, and by the French kings. In 1535 Charles V. seized Milan, as a fief of the empire, and gave it to his son Philip; whose successors, kings of Spain, held the Milanese till 1706, when it became an appanage of Austria; but a considerable part had passed to the house of Sardinia. The revenues of this duchy are computed at about 300,000l.

At Pavia is an university of great repute, the professors having much distinguished themselves in natural history. It is regarded as the first in Italy. There are manufactures of wool and silk, but the latter is inferior to that of Piedmont: there are also numerous workmen in gold, silver, embroidery, steel, and in crystal, agate, aventurine, and other stones, so that the country swarms with artisans.

* Journ. des M. tome v. p. 94.

† The citadel was built by Faciotto d'Urbino, the architect of that of Antwerp. *Tableau de la Haute Italie*, 1805, 8vo. p. 13.

CLIMATE, &c.] Mr. Young[2] represents the soil as being chiefly strong loam, or loamy sand; and the most remarkable circumstance in the climate is the mildness and warmth of the northern mountainous tracts, and the cold felt in the plains. Orange and lemon trees flourish in the open air on the western side of the lake of Como, though bounded by the high Alps, which to the north are covered with eternal snow; while in the plain of Lombardy, even to the Apennines, these trees require shelter. The Boromean isles also, in the Lago Maggiore, are covered with these delicate trees. In Parma severe frosts are felt, which are not unknown in Tuscany, and even at Rome. The lands in the Milanese, as in Piedmont, are mostly enclosed; and the farmers were metayers upon the old French plan, the landlord paying the taxes and repairs, the tenant providing cattle, implements, and seed; and the produce being divided between them: a miserable system which greatly impeded agriculture. The irrigation of the Milanese Mr. Young represents as a stupendous effort of industry; and the canals for this purpose are mentioned as early as the eleventh century; some of them being more than 30 miles long, and near 50 feet wide. The price of land is nearly 100l. the acre, and yields about three per cent. interest. The cattle, dairies, and cheese, excellent; but the sheep few and bad. Though the Milanese border, towards the north, on the higher Alps, and might thence be supposed to rival Piedmont, yet the mineralogy has been little explored, as the house of Austria possesses abundance of ancient and productive mines. Yet there are some mines of copper and lead above the lake of Como, and the mountains, and Boromean isles present flesh-coloured granite. Lapis ollaris abounds near Como[3].

NATURAL CURIOSITIES.] The fall of the river Orco near Ceresoea, of 2,400 feet, already mentioned, may be regarded as a great natural curiosity.

On his journey to Mont Cervin, Saussure gives the following account of the Blue Fountain:

"On coming out of the mine of manganese, we went to see a blue fountain, which is much talked of in the country, and is really worthy of the curiosity of travellers.

"It is not a mere spring, it is a stream which might turn a mill, and which falls in the form of a cascade upon rocks, where it presents the most agreeable and extraordinary appearance. All the bottom of the stream, rocks, stones, wood, earth, is covered with a substance which has all the shades between green and blue; what is entirely under the water is of a beautiful sky-blue; that which is but partly moistened is green; and what is dry is of a pale sky-blue colour.

"The stream itself, the water of which is quite transparent, runs upon this coloured bottom, breaks into foam, and presents by its refractions the most singular effect; it resembles the coloured flames that are produced by throwing verdigrise upon burning wood. This stream comes out of the earth from the bottom of the valley, at the foot of the mountain which contains the copper mine of St. Marcel.

"The water has neither taste, smell, nor colour; it is perfectly transparent. Its temperature was four degrees, whilst that of the external air was of 7, 3; which proves that it comes from a great depth.

"The chemical reactives did not produce any sensible alteration, except the dissolution of barytes, which made it rather of a grey colour. The volatile spirit of caustic sal ammoniac did not at all alter the colour of this water; but when poured upon the blue sediment, it changed it to a deeper blue. We collected a pretty large

[2] France, ii. 148. [3] Ferber's Italy, 315.

quantity of it, which on drying has much diminished, and assumed a colour of mountain-green.

"The sediment thrown upon a red iron appears to burn without smell, like charcoal dust, and became blackish. By the action of fire, it loses 0,40 of its weight, and disengages carbonic acid gas. It forms, with concentrated nitrous acid, a jelly full of bubbles, and of the colour of verdigrise. When the sediment has been calcined, it does not form a jelly, and there remains an indissoluble residuum of a grey colour, mixed with spangles of mica.

"My son found that a hundred parts of this sediment dried in the open air, contain;

Copper - - - -	19.
Oxyd of iron - - -	4,25.
Carbonic acid - - -	9.
Argill - - - -	2,75.
Lime - - - -	1.
Silicious sand - - -	33
Water and inflammable substances -	31
	100

"It appears, according to this analysis, that the sediment may be considered as a mountain-green, or a green oxyd of copper*."

VENICE.] The Venetian territory has been recently withdrawn from the house of Austria, and annexed to the new kingdom of Italy. A description of the well-known city of Venice would be superfluous: nor is it necessary to enlarge on the well known antiquities of Verona, and the university of Padua †.

The ancient and remarkable city of Venice was founded in the fifth century by the Veneti of the opposite shore, who fled from the incursions of the barbarians. At first each isle was governed by a tribune, till the year 697, when the first doge was elected. In the ninth and tenth centuries the government of doges became nearly hereditary, but in the eleventh the election again became open. Towards the close of the twelfth century the democratic form was succeeded by an election, and administration severely aristocratic, and well known by its singularity and stability. The Venetians having gradually extended their power along the Adriatic, in the year 1204, became masters of several Grecian provinces and islands; and after their contests with the Pisans and Genoese, became the first commercial and maritime power in Europe, till the end of the fifteenth century, when the discovery of the Cape of Good Hope transferred the oriental traffic to the Portuguese, who were succeeded in maritime exertion by the Spaniards and Dutch; and, lastly, by the English, whose naval transcendancy exceeds all ancient or modern example. The authority of Venice declined with its commerce; and the republic may be said to have expired of mere old age ‡.

The

* Saussure, viii. 233.

† Livy was a native of Apono in the Euganean hill.

‡ A celebrated traveller, who resided four months at Venice, while that city was under the Austrian government, assures me, that the government was purely military, and highly contemptuous to that ancient and venerable republic, which would have been treated with respect by a conqueror of any sensibility. The old courts of justice were abolished, and the members of the new inferior courts of *prima instanza*, &c. very ignorant and corrupt. A considerable part of the grand canal had fallen in, and no repairs were made, so that the mouth of the harbour was greatly impeded. The infatuation went so far as utterly to neglect Venice, because it was formerly the rival of Trieste! The citizens were insulted by soldiers passing in double files through the narrow streets, while the officers would enter the shops and strike

respectable

The commerce of Venice had sunk in great decline. The remaining trade of that city chiefly consisted in scarlet cloth, and in stuffs inwoven with gold and silver, sold to much advantage in the Levant; and the Venetian mirrors retain their ancient reputation; but the city did not exist so much by immediate commerce, as by the vast wealth acquired during a long period of prosperity.

The Venetian territory presents many considerable hills, branching from the Swiss and Tyrolese Alps. A minute enumeration would be superfluous; but Mount Baldo, on the east of the lake Garda, must not be omitted, having become remarkable among botanists by a variety of curious plants. Mount Bolca, fifty miles N. W. of Venice, is noted for fossil fish in argillaceous schistus. The Euganean hills near Padua have been supposed to be volcanic *.

RIVERS.] The Adige springs from the Rhætian Alps, and being joined by the Eisac on the E. pervades the S. of Tyrol and Trent, then flows by Verona towards the Adriatic, which it joins only about ten miles to the N. of the Po. The Tagliamento, Piave, and Brenta, all spring from the Tyrolese Alps †.

MANTUA.] The small duchy of Mantua was held by the house of Gonzaga, from the fourteenth century; but the last of the family being put to the ban of the empire, Mantua has been subject to Austria, since the year 1707, and was ruled by the governor-general of the Milanese. The capital stands on a lake formed by the Mincio, and was formerly supposed to contain 50,000 inhabitants, now reduced to about 12,000; the position and fortifications render it a place of great strength. The Venetian territory to the west of the Adige consisted chiefly of the Brescian and Bergomese, the latter being mountainous; but the Brescian is fertile in wine, oil and maiz, with excellent pasturages, and some mines of copper and iron ‡.

PARMA

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respectable shopkeepers without any provocation. That brutal pride which has been imputed to the Austrians was never more apparent. The whole revenue of Venice for three years could not repair the dilapidations. The palaces are deserted, the great nobles living in casinos to avoid extortion and suspicion, while the smaller are often clerks in the public offices. It needs not be added, that the Austrian power was detested.

* The green earth of Verona is found near the village of Brentonico, in slits of a calcareous rock. La Lande, ix. 251.

† Of the Venetian isles in the Adriatic, and the coast from Zara to Narenta, &c. that of Veglia is of small account. Cherso, and Osero, being only divided by a narrow strait, are regarded as one isle, woody and fertile: Pago is barren: Isola Grossa, and some of the others more fertile: Lesina is remarkable for the fishery of *Saraines*; Curzola served the Venetians as an arsenal of ship timber. Meleda, and some smaller isles, belong to the republic of Ragusa. The description of Dalmatia by the Abbé Fortis is feeble, confused, and prolix: the best is that by Lucius, Amst. 1668, fol. which also contains the original historians. The perpetual custom of modern travellers in pursuing beaten routes prevents many discoveries, and obstructs the progress of geography. Of this coast, for instance, and the west of Greece, our knowledge remains imperfect.

‡ The kingdom of Italy now includes all the northern parts; except Piedmont and Genoa, which belong to the French empire:

Before the addition of Venice the kingdom of Italy, divided into twelve departments, contained 3,552,555 inhabitants.

The department of Agogna, comprehending the two Provinces of Upper and Lower Novarese	346,213
Lario, or Como, and its districts	371,894
Olona, comprehending Milan, Pavia, &c.	346,234
Serio, or the Bergamasque	294,142
Mella, or the Bressan	333,625
Alto-Po, or the Cremonese	361,079
Mincio, the Mantuan	290,489

PARMA AND PLACENTIA.] The territories of Parma and Placentia have been conjoined for many ages. They were contested by the Lombards, and by the Exarchs of Ravenna; and after many revolutions subjected themselves to the papal see, whence they were transferred by Paul III. in favour of his son Pietro Farnese, in 1545. This family being extinct in 1731, after some contest, the duchies of Parma and Placentia were finally assigned to the Bourbon family of Spain. The population is computed at 300,000; the revenue 175,000l.

Parma is a considerable city with some manufactures, and an academy of painting; the printing press established by Bodoni was distinguished for beautiful productions. Both Parma and Placentia have universities. The soil is a rich sandy or gravelly loam, with fine pastures; and the Parmasan cheese now made at Lodi in the Milanese has been celebrated for many centuries[4]. The farms are small and agriculture ill conducted, irrigation being here little practised. The sheep are bad, and the wool like hair. The improvement of the country was much neglected by the Bourbon family. These duchies are now united to the French empire.

MODENA.] The duchy of Modena is a remnant of the power of the celebrated family of Este, who also possessed the adjacent country of Ferrara, seized by the pope in 1598. The remaining territory contains about 320,000 souls, and the city of Modena 30,000; the revenue 140,000l. The soil resembles that of the duchy of Parma; and the agriculture is little superior, the middle-men and metayers impeding industry, but some peasants in the mountains are proprietors of land. The breed of sheep is neglected. It is remarkable that in digging wells near Modena, at a certain depth, a particular stratum is found, which being passed, the water gushes up as from a subterranean lake or river. About ten miles to the south of the capital there is an aperture in the earth called La Salza, whence, particularly in the spring and autumn, ascend smoke, flame, ashes and stones, with a strong smell of sulphur. Carrara in the S. of this duchy affords the celebrated marble used in statuary.

The imperial fiefs, and smaller states, in this part of Italy, would little merit description, especially in the midst of the present revolution. This account shall therefore close with the republic of Genoa, consisting of a long mountainous tract, formerly noted for the acuteness and treachery of the Ligurians its inhabitants. The city of *Genua* was destroyed by Mago the Carthaginian general, and rebuilt by the Romans. It afterwards became subject to the Lombards, and the emperors of Germany; but in 806 had seized Corsica, and in the eleventh and twelfth centuries was distinguished in the Crusades, the Genoese rendering themselves masters of the Black Sea, with establishments in the Crimea, and in the suburbs of Pera at Constantinople, where they remained till the Turks took that city[5]. Genoa strongly contested with Venice the dominion of the sea; and the war was not terminated till

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Crostolo, Reggio, and Massa Carrara	-	179,795
Panaro, the Modenese, and the Garfagnana	-	200,170
Basso-Po, the Ferrarese, Gomachio, and Rovigo	-	227,500
Reno, the Bolognese with Imola	-	421,841
Rubicone, the Romagna	-	269,373
Total	-	3,552,555

Denina, 302,

The population of the Venetian territories has been computed at 1,800,000.

[4] Young's France, ii. 148. There are iron founderies near the Apennines. Keysler, iv. 113.
[5] See Gibbon, xi. 390.

1381. In 1471 the Genoese were expelled from the Crimea; but their maritime power continued respectable. The form of government was more democratic than that of Venice, so that the latter had a more firm executive effect. Exhausted by the Venetian war, Genoa offered voluntary subjection to France and Milan; but in 1528 Andrew Doria delivered his country, and introduced a more stable and aristocratic government, which continued till 1798, when the French form was chosen, and the new style assumed of the Ligurian republic, confirmed by the recent treaty of February 1801. In 1730 Corsica revolted from Genoa, and has not since been restored. In 1745 the Genoese declared war against the king of Sardinia, but suffered greatly in the contest.

The papal power is here little venerated, the people being immersed in business, and receiving monied heretics with open arms. The population of the territory is computed at 400,000; of the city at 80,000. The troops, including the country militia, may amount to 30,000; but the powerful fleets have sunk to a few gallies. The air is pure and salubrious, and there are excellent fruits and vegetables; but the grain is not sufficient for the consumption. The manufactures are chiefly of silk and velvet. The Apennines, which enclose this region, are in some places covered with forests, but in others are barren rocks, while in a few they afford delicious pasturage. They supply excellent marble for the proud palaces of Genoa; while Polzevera in the Bocchetta yields the beautiful stone so called, being serpentine of various colours veined with marble. In 1778 a magnificent road was made from the Bocchetta or mountains to the north of Genoa, through the Polzevera, which for the space of three years employed from 5 to 800 men, by the patriotic munificence of one noble family the Cambiasi[6]. The siege, in 1799, was very destructive.

This brief account of the northern division of Italy must not be closed without remarking, that the Cisalpine, or rather Transalpine or Paduan, republic, was re-established by the treaty of Luneville, 9th February 1801. By Art. xii. that republic was again acknowledged, as constituted by Art. viii. of the treaty of Campo Formio*.

ITALIAN ISLANDS.

THE description of the island of Sicily has been incorporated with that of the kingdom of Naples, and that of the smaller isles with the adjacent shores, but Sardinia and Corsica may be regarded as detached Italian islands.

SARDINIA.] The king of Sardinia has lost all his possessions, except this island, of which a good description has been lately published by Azuni. The population, in 1790, amounted to 456,990 souls, that of Cagliari the chief city being about 30,000. Among the animals are said to be wild horses of a very small size. This island seems capable of great improvement; and probably the same impediment prevails as in Corsica, where the lands belonging to the community, and not to private proprietors, are utterly neglected, and left as it were in a state of nature. The first and indispensable step, therefore, for the improvement and civilization of these islands, would be by a strong armed force, to divide them into estates of a moderate size, among the most able and powerful men in each community; and to spare no means of

[6] Stolberg, 1. 215. Colon is faid to have been born at the castle of Cucaro in Montserrat. Denina, 88. But from a solemn testimonial, in a law-suit for the estate of Veragua, it is evinced that the great Colon was not a Genoese, but a Ferrarese. Estalla, *Viagero Universal*, xi. 258.

* This volume was written in the year 1800, and retouched in the year 1801. At present the new republic forms a part of the kingdom of Italy.

instructing

instructing the inhabitants in their real interests, the pursuits of industry, which ought to be rewarded by lands reserved for that purpose.

The two chief rivers of Sardinia are the Oristano, running about eighty miles, and the Flumendoso, passing in opposite directions E. and W., and dividing the island into two portions. The mountains run N. and S., the highest being Limbara, Villanova, Arizzo, and Fonni, of which the summits are generally covered with snow. The chief plains are towards the south, and are tolerably fertile in wheat, of which a considerable quantity is exported, barley, beans, lentiles, &c. Among the wines the most esteemed is that of Nasco. There are groves of wild olive trees; and the orange, lemon, pomegranate, jujub, and other fruit trees are common, while the tall palm decorates the forests.

The wild horses are chiefly found in the territories of Bultei and Nurra; and still more numerous in the isle of St. Antico in the forest of Canais: they are very small, but extremely well made, and active. This singular circumstance has escaped the attention of naturalists. Rams sometimes have from four to six horns. Small deer are not uncommon, and the boar is particularly numerous and terrible. Nor must the wild sheep be omitted, which inhabits the most solitary parts of the mountains, and sometimes engenders with the tame. For the animals of Sardinia, Cetti may be consulted. The tunny fishery is of considerable importance; but anchovies are rare, as are sardines, though they seem to have formerly abounded, and to have received their name from the island; nor must the coral fishery be omitted.

Among the minerals the chief is silver, of which there are several mines, as those of Guspini, Arbus, Argentera, &c. but the lead mines are the most productive, and those of Iglesias are said to yield from sixty to eighty pounds in the hundred weight, being in hills of argillaceous schistus, and limestone, while the most common gangart is barytes. The product of the mines is computed at 321,000 francs. In the northern mountains are found carnelians, calcedonies, agates, turquoises, &c. but the sardonix is as rare as the sardine, and the former probably derived its name from the inland city of Sardes in Lydia. The mountains of Nurra abound in porphyry, while granite is chiefly found in those of Gallura, and seems to have been used by the Romans.

The dress of the Sardinians is a vest of white or scarlet woollen, covered with a large coat or jacket, without sleeves, composed of four sheep skins. The dress of the women has nothing particular. The Italian language begins to prevail; but the ancient dialect seems a mixture of the languages of the various conquerors. The original inhabitants, like those of Corsica, were probably Iberi from Spain. The revenues are computed by Azuni at 1,695,062 francs. The exports about 8,000,000 livres; and the imports two millions. The religion is the Roman Catholic, and it is singular that with six bishoprics there are three archbishoprics *.

Mr. Young † informs us, seemingly from good authority, that this isle has been shamefully neglected by the government; for, exclusive of the mountains, the whole country may be regarded as waste, and only cultivated in a few spots. The chief proprietors are absentees, and the peasantry crushed by rapacious stewards; the number of inhabitants about 450,000. The frequent wastes abound with wild ducks; but the number of cattle and sheep is deplorably small, and the morasses produce most pernicious exhalations.

Corsica.] Of the island of Corsica a brief account has been given at the end of the description of France, to which country it is now subject. But as this island, in strict geography, belongs to that division of Europe called Italy, it may not be improper to

* *Walckenaer's Notes on the French translation of this work*, iii. 600.

† Journey in France, ii. 257.

add some information concerning its topography and natural history, the last in particular being intimately connected with its climate and geographical position.

The most remarkable mountains of Corsica are Monte Rotondo, Monte d'Oro, and Monte Cinto: the summit of the first is 1449 fathoms above the level of the sea. There are two small lakes, the Ino, and the Creno, on Monte Rotondo: the diameter of Lake Ino is 160 fathoms; its depth is unknown *. The height of Monte d'Oro is 1361 fathoms. These mountains are situated nearly in the centre of the great chain of granite, which traverses the island from north to south. On this chain recline mountains of the second and third order, which decrease gradually in height to the sea without exception, save on the eastern shore of Corsica, to Bastia. Most of these mountains are covered with snow during the winter: the snow even lies all the year in the recesses. The vallies are in different directions; but the farther from the principal chain, the more their aperture is directed towards the sea. Those on the sides vary in their respective correspondence; the receding and salient angles do not observe a constant position with those of the opposite side. The vallies in general are narrow, and not deep at the upper part; but they increase in breadth and depth as they descend. The sides of the mountains are mostly covered with forests composed of *quercus ilex*, *quercus suber*, *pinus larix*, and *pinus abies;* the latter being very beautiful †. The vegetable earth, in the part comprehended between Calvi, Bastia, Corte, and Cervione, in general rests on a basis of schistus, or on calcareous rocks of different qualities. The schistus near the sea shore is that known by the name of hard argillaceous schistus; it is always intersected with veins of white quartz, which penetrate the whole depth of its beds. It is not uncommon to find a kernel of calcareous spar environed with a ferruginous earth; but it does not exhibit any trace of organic bodies. In the other parts of the island, granite is found in great masses, currents of lavas, sometimes mixed with felspar, sometimes with a black substance, and often with both; jaspers and porpyhry are also found: the singular rock known by the name of globular granite of Corsica, deserves all the attention of geologists. The Fiumorbo, the environs of Bastia, the cape of Corsica, and the Nebbio, furnish pot-stones, serpentines, asbestos, variolites; and amianthus, in such quantities that they make paper from it. Beautiful marble is also brought from the environs of Corte; and near the village of Moltifao, canton of Caccia, there are signs of copper and lead mines ‡.

* They are not observable in the excellent map by Bacler d'Albe.

† Vines, olives, and mulberry trees for the produce of silk, may be recommended as great objects of cultivation.

‡ Walckenaer's Notes on this Geography, Fr. ed. tome i. p. 221.

Dolomieu, in the most interesting of his productions, his Dissertation on Rocks, to be found in the *Journal des Physique*, vol. xxxix. 1791, xl. 1792, and the New Series, vol. i. p. 195, has observed that the rocks of Corsica are often porphyro-granitic, granite sometimes passing into porphyry, if among the small grains of felspar there be some large and distinct. But this remark is inexact, as trap is now known to form the basis of porphyry, and the rocks above described belong to another class. He describes, p. 247, the porphyries of the valley of Niolo in Corsica, which have often been confounded with agates and jaspers, on account of their fine grain and diversity of colour. In Niolo are also found vast blocks of green petrosilex spotted with red felspar.

In the violet granite of Corsica the felspar is in large crystals of a violet colour. *Buffon, Mineralogie*, Paris 1783, 4to. i. 115. The richest coral rocks are between Sardinia and Corsica. Ibid. iv. 150.

The mines of the celebrated Corsican green stone, which, according to Saussure, is a mixture of jad and smaragdite, but according to Werner, of petrosilex and Actinote, are near Alezani. *Journal des Mines*, No. 65. Silver occurs near Caccia, Farinole, and Galeria. Ib.

Barral, in his Mineralogy of Corsica, 1783, p. 31, indicates mountains near Fiumorbo of serpentine in globules, the size of nuts, with concentric zones, stripes, &c. At cape Corso octadral crystals of iron occur in chlorite schistus.

Of the beautiful ocular granite only a large block was found near Olmetto. See a memoir of the venerable mineralogist Besson, *J. de Phys.* 1789.

SUPPLEMENT TO ITALY.

VENETIAN DALMATIA. — RAGUSA.

VENETIAN DALMATIA.] THE want of some account of Dalmatia having been regarded as an imperfection in the present work, this is the proper place to supply that deficiency, as the chief possessors were the Venetians, and even the independent republic of Ragusa bears the name and form of an Italian state. Independent of the Turkish empire in Europe, the Dalmatian provinces cannot be justly arranged under that division. The Austrian government, with the grand maritime city of Venice, also acquired these valuable territories; but from an unaccountable imbecility treated Venice and her possessions, which in any other hands would have been equal in value to the lost Netherlands, with such contempt and neglect, by a fatal routine in favour of the old Austrian port of Trieste, that impartial Europe was filled with astonishment.

It is unnecessary to trace the ancient geography of Liburnia and Dalmatia, or the ancient names and divisions of Albania. The inhabitants, mostly scattered over mountains, have been computed at about sixty thousand. The Montenegrins, so called from the Monte Negro, or Black Mountain, near Cattaro, have been reckoned among the most daring; while the fame of Scanderbeg has reflected glory on Albania. All profess the Greek religion, but with several remains of pagan superstition, which may be traced in the travels of Fortis. The Morlacs, and other inland tribes of Dalmatia, are honest and sincere barbarians; and the dress of their vaivods somewhat resembles the Hungarian *.

That portion of Dalmatia which formerly belonged to the Venetians is full of little castles and forts in the old style. The inhabitants are not only bold, but often skilful mariners, and are rather to be ruled by mildness than severity. They are attached to their chiefs and their privileges; and Venice secured their fidelity by moderate taxation, and plentiful supplies of provisions, for the country is generally barren.

* The people of Albania are called Arnauts by the Turks, and lately distinguished themselves in Egypt. The interior of Dalmatia, on the S. of Bosnia, subject to the Turks, has been called Herzgovina, or Hersek, Busch. iii. 364. Fr. tr. which others call the country of Mostar, from the capital which stands on the river Narenta, where it is passed on an ancient Roman bridge. Mostar was formerly celebrated for a manufacture of arms, resembling those of Damascus. The old bans, or chiefs of Bosnia, were vassals of the kings of Hungary, formerly masters of Dalmatia; nor was Bosnia subdued by the Turks till 1522. Upper Bosnia, also called Herzgovina, or the Duchy of St. Sabas, was dismembered in the fifteenth century by Frederic III. king of Hungary, but was soon swallowed up in the Turkish conquests. The chief towns of Herzgovina are, Narona, or Narenta, formerly the capital, Imos, Varbosania, Mostar, and Klinova.

Towns.] The chief town is Zara, the ancient Jadera, formerly contested between the Venetians and Hungarians, but possessed by the former since 1409. Zara is one of the strongest places in Dalmatia, being surrounded by the sea, except on the E. where there is a draw-bridge and fortress. There is also a citadel, with a deep ditch cut in the rock. The port is towards the N. spacious and well defended; but there being a deficiency of water, the rain is preserved in cisterns. It was formerly the residence of the governor of Dalmatia; and is an archbishopric since 1154, the bishops of Alba, Vegia, and Osero being suffragans. There are some remains of Roman antiquity. In commerce, Zara is chiefly noted for marasquino, the most celebrated of all liqueurs, and which is distilled from the kernels of a kind of cherry.

Aurana is one of the most delightful towns of Dalmatia, being situated on a lake of the same name. It is fortified, and was a considerable time in the hands of the Turks, but retaken in 1684. Knin, otherwise Clin, or Tinen, is a fortified town on a hill, upon the very frontiers of Bosnia and Dalmatia. It is strengthened by a deep ditch, supplied with water by two rivers in the neighbourhood. It has been frequently seized by the Turks; and the final possession by the Venetians only dates from 1688. Sebenico is a strong maritime town, with a large haven and four forts. The church of St. John, in the citadel, is a fair edifice of marble. It has been four times besieged by the Turks without success, the Venetians having held possession since 1412.

Trau is also well fortified, and is a pleasant town with a suburb in the isle of Bua. The haven is commodious, and sheltered by two promontories.

Salona was the residence of the old kings of Illyria, and afterwards of the Roman prefects, and of the questors who received the revenues of the rich mines of Dalmatia. It was a station of the Roman fleets, but is now greatly reduced. Spalatro, a maritime town, is well fortified, but commanded by adjacent hills. It is the seat of an archbishopric, and a mart of the Levant trade, with a large haven, and a lazaretto. The ruins of the palace of Dioclesian are celebrated. Spalatro has belonged to the Venetians since 1420.

Detached from these provinces, and at a considerable distance towards the South, in the province of Herzgovina (also called that of St. Sabas, because that saint was there buried), the Venetians possessed Castel Nuovo, once capital of the duchy of Herzgovina, and one of the most important fortified places in Dalmatia, being on a high rock near the sea-shore. Cattaro is surrounded with mountains, which almost exclude the view of the sun. It is tolerably fortified, with a strong castle on an eminence; and has been subject to the Venetians since 1418. In 1806 it was disputed by the Russians and French. These districts are detached from the former by the territories of Ragusa.

Isles.] The most remarkable islands formerly belonging to Venice are Osero, Cherso, Veglia, Pago, Lesina, and Curzola or Cocyra Nigra. Many of these isles are fertile in wines and olives, with figs and other fruits: and have been briefly described in a note on Italy. Near Lesina there is a famous fishery of sardines, which used to supply great part of Greece and Italy. The Turks having attacked Curzola, in 1751, were effectually resisted by the women, after the men had fled. The calcareous hills and islands of Dalmatia present some singularities; as the lake Jesero in the isle of Cherso, which only diffuses its waters every fifth year *; several curious caverns; and prodigious quantities of fossil, bones of horses, oxen, sheep, &c. but doubtful if any be human; nor have, any decidedly such, been discovered in any region of the globe.

* Fortis, 429.

The Venetians also possessed some towns in Albania, as Larda a considerable place on a gulf of the same name; Voinizza on the same gulf near cape Figolo, opposite to the famous promontory of Actium where Augustus defeated Mark Anthony; Prevesa, a sea port town; and Butrinto, which is of little consequence. Among the Venetian possessions were also the islands of Corfou, Cefalonia, with others in that quarter lately erected into a separate republic.

Republic of Ragusa.

This little republic has been briefly mentioned in a note on Italy. The government is an aristocracy; and the chief magistrate, called the rector, is changed every month, an institution of singular jealousy. There is also a council of ten; and a great council composed of all the nobles above twenty years of age, who name the *pregadi*, or senate of sixty, which directs all state affairs, receives and sends ambassadors, and bestows offices. The revenue of Ragusa was formerly computed at a ton of gold, or about ten thousand pounds sterling. This little republic has found it necessary to court the protection of the Turks, and pays a tribute of about twenty thousand sequins, though the commerce be of use to the Ottomans in supplying them with ammunition. Jealous of their neighbours, the citizens of Ragusa only permit the gates to be opened a few hours of the day. It is a well built city, and the commerce not inconsiderable. The harbour might be rendered capable of a firm defence; and the circumjacent isles are beautified by nature and art. The earthquakes have however been terrible, that of 1667 having destroyed six thousand persons. The Ragusans have many country houses at Gravosa, another sea-port town. Stagno is another little town subject to Ragusa. Of the Ragusan isles the chief is Milet, or Melada, fertile in oranges, lemons, and good wine. On the N. there is a tolerable haven, with a town of the same name. Three or four little isles in that neighbourhood also acknowledge the sovereignty of Ragusa.

ZOOLOGICAL REMARKS,

By Dr. SHAW.

EUROPE.

BRITAIN.

AMONG the rarer animals of Britain may be numbered the *Sorex bicolor*, or Water Shrew, a larger species than the common Shrew, or *Sorex erinaceus*, and of a different colour, viz.: black above, and whitish below. It inhabits the banks of rivulets.

Besides the common Bat, we have the *Vespertilio auritus*, distinguished by the vast size of its ears; the *V. noctula*, or great Bat, measuring fifteen inches in extent of wings; and the *V. ferrum equinum*, or Horse-shoe Bat, distinguished by a horse-shoe shaped membrane at the tip of the nose.

The *Mus messorius*, or Harvest mouse, a beautiful little species, not much more than half the size of a common mouse, and of a reddish brown colour above, and white below: it is particularly seen in Hampshire, and fastens its nest, at a considerable distance from the ground, to the stems of thistles and other plants growing near each other.

Among birds, the beautiful *Merops apiaster*, or Bee-eater has been sometimes seen, a flock of not less than twenty having been observed in Norfolk. The Hoopoe and the Rose-coloured Ouzel are also occasional visitants.

The *Crane*, which is supposed to have been once common, has forsaken the island, appearing only as an occasional straggler from other regions.

The *Motacilla arundinacea*, or Reed Wren, is of the size of the Willow Wren, and of a greenish olive-brown colour above, and tawny-white beneath; the chin is white: this bird seems first to have been noticed by the late Mr. Lightfoot, who discovered it in reedy situations about the river Coln, in Buckinghamshire.

Motacilla Dartfordiensis, or Dartford Warbler, is occasionally met with in some parts of England. It is somewhat larger than the Willow Wren, and of a dusky reddish-brown colour, with the middle of the belly white: the eyes red, and the eyelids deep crimson.

Motacilla Sylviella, or Lesser White-Throat, is also of the size of the Willow-Wren, and of a cinereous brown colour above, and whitish beneath. This also was first observed, as a British species, by Mr. Lightfoot, who found it near Bulstrode in Buckinghamshire, where it builds its nest in low bushes. It has been supposed to be the *Motacilla Sylvia* of Linnæus.

Charadrius Himantopus, a beautiful species of the Plover tribe, of a white colour, with the wings and tail black, glossed with green, is remarkable for the excessive length of its bright red legs, and is occasionally seen about the coasts, &c.

The *Cancer Bufo*, or Toad Crab, remarkable for its shape, and roughened surface, has been observed about the coasts of Wales.

The rare and singular fish, called *Gymnetrus Ascanii* (Gen. Zool.) remarkable for its great length, and thin, compressed, silver coloured body, is sometimes seen on the English coasts. In the northern seas it is said to be generally seen either preceding or accompanying shoals of Herrings, from which circumstance it has obtained the popular title of King of the Herrings.

Among the rarer British insects is happily numbered the *Gryllus migratorius*, or Migratory Locust, so destructive in some parts of Europe: with us it has rarely been seen in any considerable numbers, and then only as a straggler from other climes.

The curious and large species of Monoculus, called *Monoculus apus*, is sometimes found in muddy stagnant waters, but seems to be a local animal, and to be numbered among the rare British insects. Its history has been given with elaborate exactness, by Schæffer a German naturalist. In that country it appears to be more common.

The *Papilio Antiopa*, usually ranked among the rarest of the British *Lepidoptera*, has, of late years, made its appearance in greater number than formerly.

The beautiful *Hydrachna geographica*, remarkable for its polished jet-black colour variegated with gold-red spots, is an inhabitant of the clearer kind of stagnant waters.

Among the Worm tribe the great *Sea-Gordius*, or Cornish Long-worm, is one of the most remarkable; measuring from five to fifteen, (or as some report) even thirty feet in length: its colour is olive-black, and its body slightly flattened: it has been chiefly seen about the coasts of Cornwall, and those of Scotland.

The curious Zoophyte, called *Lucernaria quadriloba*, has been found on the coasts of Ireland, attached to fuci, &c.

The three principal species of those wonderful Zoophytes called *Hydræ*, or *Polypes*, are by no means uncommon in Britain, and are generally to be found, except during winter, in the clearer kind of stagnant waters, and often in such as have a brisk current. Of these the most common is the Green Polype, or *Hydra viridis*, of Linnæus.

The *Hydra grisea* and *fusca*, or the Brown and Long armed Polypes, are rather less common than the green. The particular history of these Zoophytes can hardly be expected in a sketch like the present. Suffice it to say, that their discovery has formed as it were an epoch in the science of Natural History, and that they may be considered as affording the clearest and most undoubted proofs of the union of animal and vegetable life. From the contemplation of these fresh-water Polypes, the ingenious Mr. Ellis was led to suppose, and at length to demonstrate, that many of the marine productions known by the general name of Corals and Corallines, and commonly regarded as sea plants, were in reality Zoophytes, the animal part being analogous to the common Polype, but of a ramified or compound form, and guarded, in the different tribes, by a proper union either of horny or calcareous matter, in order to enable them to support their existence in the turbulent medium in which they are destined to reside.

That curious fish called the *Gastrobranchus cæcus*, erroneously ranked by Linnæus amongst the Vermes, under the name of Myxine *glutinosa*, is not unfrequently found about the British coasts, and is said to destroy other fishes by piercing their skin, and sucking their juices, and even devouring all the internal parts. Its usual length is from four to six or seven inches, and its general appearance is that of a small eel: the mouth is situated beneath, as in the Lamprey, and is of an oblong form, bearded on each side, and furnished with a series of teeth, disposed on each side, into a double row, in form of a pectinated bone. This animal is destitute of eyes: the accurate examination of its structure by Dr. Bloch, has proved it to belong to the tribe of cartilaginous fishes: the skin is smooth, and destitute of scales, and the animal is of an uncommonly glutinous nature.

The

FRANCE.

The *Beaver* is said to be sometimes found in the southern parts of France, where, however, it does not appear to display those surprising talents in preparing its retreat, which are supposed to distinguish the American Beavers, and which have probably been much exaggerated by some of those who have described their operations.

The very curious insect called the Lion-Pismire, or *Myrmeleon Formicaleo*, which is not yet dscovered in England, appears to be not uncommon in France, where it inhabits dry and sandy places. In its complete or perfect state this insect bears no inconsiderable resemblance to a small Dragon Fly, and pursues the smaller insects in a similar manner. It deposits its eggs in sandy situations, and the young, when hatched, begin separately to exercise their extraordinary talent of preparing, by turning themselves rapidly round, a very small conical cavity in the sand. Under the centre of this cavity the little animal conceals itself, suddenly rushing forth at intervals in order to seize any small insect which, by approaching too near the edge of the cavity, has been so unfortunate as to fall in; and, after sucking out its juices, throws it to some distance beyond the cavity. As it increases in size it enlarges the cavity, which at length becomes about two inches or more in diameter. The larva, when full grown, is somewhat more than half an inch long, and of a flattened figure, broad towards the head, and gradually tapering to an obtuse point at the extremity: its colour is a dusky brown, and the body is beset with numerous small tufts of dusky hair: the legs are slender, the head furnished with a pair of long, slightly curved and serrated jaws, and the whole animal is of a rather unpleasing aspect, bearing some general resemblance, on a cursory view, to a flat-bodied Spider. When arrived to its full growth, it envelopes itself in a round ball of sand, which it lines and agglutinates with pearl-coloured silken fibres, drawn from the extremity of its body: it then changes into a chrysolis by casting its skin; and, after the space of about a month, gives birth to the perfect insect.

Among the insects of France the beautiful *Phalæna Pavonia*, (*Ph. Junonia*, Gen. Zool.) deserves particular mention, being by far the largest of all the European Lepidoptera. It proceeds from a very large green caterpillar which feeds on the leaves of apple and pear trees, &c. and is not very uncommon in the neighbourhood of Paris.

RUSSIA.

In some of the Southern parts of Russia is said to occur a very formidable insect allied to the Spider tribe, and belonging to the genus *Solpuga:* its body is oblong, and the head furnished with a pair of very strong fangs: the whole animal is of a brown colour, and hairy: its bite is considered as highly dangerous, and is even said to prove sometimes fatal.

AUSTRIA.

In the Zoology of this Empire, must by no means be omitted, the very singular and rare animal sometimes called by the name of *Proteus anguinus*. It is a species of *Siren*; and, like the Siren *lacertina* of North America, has considerably embarrassed systematic naturalists, some of whom have considered it as only the larva or imperfect state of some hitherto undescribed species of Lizard, while others have regarded it as an animal in its perfect or ultimate state. It is found in the remarkable lake called *Zirchnitz* in Carniola, and particularly in the part called *Zitticher See;* and is about twelve

or thirteen inches in length, of a pale flesh-colour, and of a lengthened, cylindrical shape, not much unlike that of an eel: on each side the breast are three ramified branchial fins or breathing-organs, of a bright red colour: the fore legs have each three divisions or toes; the hind legs only two: the tail is laterally compressed, and slightly rounded at the tip. This animal has no external eyes, those organs, which are excessively small, being seated beneath the skin. It is to be observed, that no species of Lizard of which this creature can possibly be supposed the larva, has ever been discovered in this part of Europe.

HOLLAND.

In many parts of this country is seen the White-winged *Ephemera*, so elaborately described by the famous Swammerdam, and which is generally considered as the most remarkable instance of the brevity of animal life; since, when arrived at its complete or ultimate state, it survives only a very few hours, perishing in the course of the same evening that gave it birth. It is to be remembered, however, that its larva or caterpillar lives in its aquatic state two, and sometimes even three years, and is in this state so tenacious of life that Swammerdam assures us that one which he pierced with a pin, and fastened to a board, lived all the next day notwithstanding. In its aquatic state it is extremely allied to the larva of the common May-Fly, and when arrived at full growth, rises, like that insect, to the surface of the water, generally between the hours of six or seven in the evening; and, the skin of the back cracking, and springing off with an elastic motion, the fly is almost instantaneously evolved, as in the common May-Fly, after which, it flies to the nearest convenient spot, and, again divesting itself of its pellicle, appears in its ultimate or perfect state. It now flies again to the water, and fluttering over the surface, as if sporting with its innumerable companions, enjoys all the pleasures of its short remainder of existence: the female breeds, deposits her eggs, and, like the male, perishes, before or with the dawn of the succeeding day. It appears in this its perfect state about Mid-summer, and the season of its appearance lasts only three days, none being seen again till the following year. It seems to be the largest European species of Ephemera.

NORWAY.

One of the most remarkable animals in this country is a species of Rat called the Lemming. It is the *Mus Lemmus* of Linnæus, and is about the size of a very large Field-mouse, and of a mixed or patched black and chesnut colour above, and white beneath. This animal is celebrated for its wonderful migrations, which take place at distant and uncertain periods in different parts of the country. Its general residence is in the mountainous regions, from which it sometimes descends into the plains below, in such incredible numbers as to become a temporary scourge to the country, proceeding in a direct course, moving chiefly by night, and devouring all the herbage in the passage; the surface of the ground appearing as if burnt. These destructive migrations seldom take place oftener than once in eight or ten years, and in some places not so often. These animals were formerly believed to fall from the clouds at particular seasons.

SWEDEN.

In some of the marshy districts of this country is said to exist a most extraordinary animal, ranked by Linnæus among the Vermes, and called *Furia infernalis*. It is said to bear some resemblance to a minute *Scolopendra* or *Centipede*, having a thin, thread-shaped body, edged along each side with a row of sharp, reversed prickles, lying close to the sides of the body, or at very acute angles. In consequence of this structure it is capable of almost instantaneously perforating the skin, causing the most violent pain, and sometimes proving fatal in the space of a quarter of an hour. It is pretended that it drops from the air on the bodies of animals during the summer season, and is not to be extracted without extreme difficulty and danger. Linnæus tells us that he himself once suffered from its attack, near the city of Lund in Sweden. Dr. Solander gave a slight description of this animal, the existence of which has however been sometimes doubted. At all events the accounts of the evils produced by its attack seem to have been greatly exaggerated.

ITALY.

About the coasts of Italy are seen many species of the curious genus called *Medusa*, which are of a gelatinous substance, and float in numbers on the surface of the sea. Among these the *Medusa Pulmo* is one of the largest and most elegant. In its general appearance it represents a kind of chandelier, with a large, concave, umbrella-shaped top, scolloped round the edge, and having eight large, pendant branches, with sixteen subtriangular appendages hanging from the principal or central trunk: the colour of the whole animal is a very pale, transparent blue.

PART II.

A S I A.

PART II.

ASIA.

MEMOIR

ON

THE RISE AND PROGRESS OF DISCOVERY

IN

ASIA.

BY a singular fatality, while America, which was only discovered three centuries ago, has been since nearly explored in all its extent, Africa, the seat of the Egyptians, perhaps the most ancient of enlightened and civilized nations, remains in a great degree unknown; and Asia, whence the light of knowledge passed to Europe, has been so slowly unveiled, that Siberia is but a recent discovery, and the eastern coasts of Asia have been first delineated in a satisfactory manner by recent British navigators. Of this curious and important subject, a brief idea is given in the "progress of geography" in Asia; but as it is one of the most interesting topics of the science, it was thought necessary, in a complete system of modern geography, to enter into more ample discussions, especially as the author had procured some materials which had escaped former investigators.

If in estimating the progress of geography, we were uniformly to argue that civilized and enlightened nations may be said to discover, and record on the page of knowledge, countries more barbarous and uncivilized, it would be difficult to chuse the focus of illumination. For in the progress of society who shall pronounce if the Chinese anticipated the Hindoos; the Hindoos the Persians, the Assyrians, or the Egyptians? But as commerce is among the first marks of civilization, and the Mediterranean sea, lying between Europe, Asia, and Africa, afforded resources for this purpose not to be traced in any other quarter of the East, it is natural to conclude that the Assyrians may have preceded any other division of mankind in the arts of civilization. The relations of the Mahometan travellers in the ninth century, universally admitted to be authentic, since the discovery in the national library of France of the manuscript used by Renaudot, evince that the progress of society in China was then more imperfect and inclined to barbarism than theory had expected. It is, indeed, reasonable to conclude from the appearances of nature, as well as from the most ancient records of various nations, that the high and extensive table land, in the centre of Asia, was the first region which arose from the primeval waters, and the first cradle of the human race, though the soil has been since exhausted, and the fertile land withdrawn by numerous rivers, and deposited, as usual on a smaller scale, in the circumjacent vallies. It is alike reasonable to infer, from the concurrent testimony of ancient records, that the light of civilization did not arise from the eastern extremities of Asia, but rather in the west, or towards

the centre, of the southern parts of that vast continent. Hence many learned men have inferred that Hindostan is to be regarded as the most ancient seat of civilization; while others are rather inclined to suppose that the progress was from the confines of the Mediterranean to Persia, and thence to the east. Certain it is that the Egyptians seem to have preceded any other nation whatever in those monuments and usages which evince the most ancient civilization. That they were neither the parents nor progeny of the Chinese, as has been imagined, is sufficiently clear from their form and features, observable in the numerous mummies, in which there is no appearance whatever of the oblique eye, the thin strait beard, or any other character of the Chinese physiognomy. That they were indigenes of Africa seems equally improbable, as there is no other African nation whatever which has made any progress towards civilization. The Abyssinians, it is well known, passed from Arabia; and Sallust, who refers to Punic manuscripts, asserts that other maritime parts were peopled by the Medes, Persians, and Armenians. It is indeed among the proofs of the most ancient civilization that we never read of any colony planted in Asia; while, on the contrary, colonies have passed from that continent to Europe and Africa. As therefore, according to the most ancient records, the other distinguished nations in Africa derived their origin from Asia, so it is reasonable to infer that the Egyptians fell under this description, the more especially as they are found precisely on that side of Africa which is opposite to Asia. Hence the author had been formerly induced to believe that they were of Assyrian or Arabian extract: and their language, which is now allowed by the most learned orientalists to be peculiar and unique, would not have been an infallible argument of the contrary position, for it might have been adopted from the greater number of the preceding rude inhabitants; as, not to mention many other instances, the Quechua or language of the Incas has supplanted the Spanish among the creols of Peru. But the marked approximation of features; the nature and magnitude of their temples; the dominion of the priesthood, which in many instances has rather extended than obstructed the arts, though they monopolize the sciences; the emblems of some of the divinities said to be such as to excite the immediate devotion of the Hindoos who accompanied our army; and several other circumstances may serve to induce a belief that a willing colony of Hindoos, a party of exiles who had offended the severe regulations of their country, or perhaps merely a party driven by the natural course of the trade winds at a particular season of the year, had found an easy passage across the Arabian Sea, and landed in Abyssinia, before it was possessed by the Arabian colony; whence, according to their traditions, the Egyptians migrated towards the north, naturally preferring the fertile vale of the Nile to the rugged alps of Abyssinia and the deserts of Nubia. If the Coptic cannot now be traced among the languages of Hindostan, it may perhaps have been adopted from a conquered nation; for the Egyptians, strictly so called, appear like the Peruvians to have been only the ruling people: and though themselves of a dusky hue, as appears from numerous paintings in the tombs of Thebes, and other monuments, which, from the exclusion of the air, are as fresh as if recently coloured, yet so numerous were their negro subjects that several ancient writers have described the Egyptians as of a black complexion, while the contrary is evident from their monuments, and the infallible testimony of themselves in their mummies *.

ATLANTES, A FABLE.] As to the fable of the Atlantes, which would indicate the most ancient civilized nation to have existed on a continent to the west of Africa, or more

* Abydenus (apud Joseph et Euseb.) and Strabo xv. p. 687, say that Nabuchodonosor planted a colony of *Lybians* near the Euxine. Pindar Pyth. iv. 376, calls the Colchians *brown*: the Scholiast says they were *black* because they came from Egypt.

plausibly in Africa itself where their territories were inundated by sand, and not by water; it has never excited the least attention of men of solid judgment or profound erudition: and Bailly, its chief restorer, though profoundly versed in the history of astronomy, was in other respects extremely superficial. Plato, who from the exuberance of his imagination ought rather to be styled a poet than a philosopher, first recorded this pretty romance, as having been recited by the Egyptian priests to please the Greek credulity, and love of the marvellous. As at the same time they added that the sun had repeatedly changed its course since these events happened, it would be difficult to determine which was the east and which was the west, or in what region of the world to search for the Atlantes; as the straits of Hercules among the Egyptians may have been those of the Hindoo Hercules, Rama, between Hindostan and Ceylon. But it is idle to argue concerning this fable, for while its modern repeaters have carefully but most unfairly selected only the probable circumstances, the reader has only to consult the original; and when he finds cities walled with gold, and houses roofed with diamonds, he will only smile at the absurdity of those who are capable of repeating such Arabian tales, such palpable fictions as would not even deceive the most puerile understanding. There is yet another theory of Bailly, founded on the system of Buffon, that the earth, originally a fragment of the sun, first cooled and became inhabitable towards the poles; so that civilization must have spread from the frozen banks of the Ob, the Yenisei, and the Lena. But why spread from the northern pole in preference to the southern? Civilized nations always leave marks of their existence in monuments, weapons, utensils, and ornaments; and none such have been found in northern Siberia, where even the articles found in the tombs on the south of that country, ludicrously supposed by Bailly to belong to his primeval nation, are well known by every antiquary to be Persian relics, spoils of the armies of Zingis and Timur. Men of more sedate judgment than Bailly have however conceived a primitive civilized people, as the only supposition which can account for the identity or similarity of many objects of ancient science. But as human nature is the same in all countries, it is natural that the same objects should impress the same sensations and ideas. Different nations might invent years, and months, and constellations; might measure by their extended arms; might number by their fingers: so that to a just reasoner there is less reason to wonder that there should be identity, than that there should be variety.

HINDOOS AND EGYPTIANS COMPARED.] But while the Egyptians are admitted into perhaps the first rank among the civilized nations of antiquity, it by no means follows that the Hindoos, if their ancestors, have yet a prior claim. For situation contributes as much to this effect as natural talents; and that of the Egyptians, in a country which derived all its fertility from a river, and by requiring little labour to procure the necessaries of life, left abundant time for other pursuits, was of all others the most adapted to this purpose; not to mention the Mediterranean and Red Seas, which, by prompting commercial intercourse, contributed to the diffusion of knowledge. If the Assyrians or Phenicians preceded in this career, their neighbourhood would be an additional cause; and the Egyptians might have made a great progress while their ancestors, the Hindoos, spread over a vast extent of country, and divided into several kingdoms, must have been retarded by frequent wars, and other unavoidable causes. So far as the records of history extend the Persians were among the first nations who were united under one sovereign; and it would be difficult to affirm whether they or the Egyptians present this first evidence of civilization. But the Hindoos can have no claim, as they were divided into petty kingdoms long after the period when Egypt and Persia enjoyed this prerogative. Civilization, the arts and sciences, also accompany the erection of cities, as commerce and wealth the establishment of roads and canals. It is therefore not a little observable that the whole of Egypt, a narrow valley between

two

two ridges of mountains, and fortified as it were by surrounding deserts, may be said to have formed one city, so easy and rapid was the intercourse by the tranquil navigation of the Nile. Hence it would not be wonderful that the Egyptians had preceded the Hindoos in all the advantages of civilization, even allowing that they were a colony from Hindostan; as in like manner, not to mention numerous instances, the Saxons in England had made a considerable progress, while their ancestors in Germany remained in a state of barbarism.

THEIR CONNECTIONS.] Before any attempt to arrange the progress of discovery in Asia, it became necessary to indicate some focus whence the irradiation was to be measured. For if we regarded, as in modern times, Europe as the centre of discovery, the rule would be so totally inapplicable to ancient periods, that Europe itself, then lost in barbarism and ignorance, was an object of discovery to the enlightened Asiatics. It might indeed be an object of curiosity to discover what the ancient Phenicians, whose commerce first opened the stores of European knowledge, had discovered by their inland commerce concerning the extent of Asia, and whether the early Egyptians maintained commercial relations with Hindostan, as M. Denon infers from some articles of furniture represented in the sepulchral paintings. Their religion seems so far original, that they would either appear to have been a party who, as it happens, had embraced particular tenets before they abandoned their parent soil; or had passed, as more probable, when the mythology, not reduced into a system by poets or records, was left to the lax and varied tradition of the people; and in Egypt adopted new features from the local situation, which was so singular and peculiar as to resemble no other country. Nor could their intercourse with Hindostan, when, in the course of ages, they had extended their population, and begun commercial enterprises, be expected to have any influence on a system already imbibed, and recorded, and guarded by a numerous priesthood. Hence the similarity between the Egyptian and Hindoo worship is far from being general, or even striking; while at the same time both had assumed such invincible sway over the people, that Cambyses, the powerful king of Persia, irritated at an obstinate idolatry which he despised, as incongruous with the Persian ideas of a supreme deity, the creator of the objects of Egyptian adoration, spread destruction and blood in a war which may be called religious, without being able to eradicate the popular creed. But concerning the ancient Egyptian knowledge of Hindostan, and other parts of Asia, it would now be vain to enquire; nor would the Hindoos, nor the Chinese, supply many materials for such a disquisition. The first source of discovery was commerce, which the Hindoos seem in all ages to have rather admitted than practised. Conquest was another great source of discovery; but the Hindoos were rather exposed to conquests than conquerors. It is well known that Darius, son of Hystaspes, conquered a considerable portion of India *: and sufficient credit may be lent to the native annals and traditions of Persia, to believe that its more ancient kings had repeatedly carried their victorious arms into that country. But when the ancients inform us that Osiris the Egyptian deity reigned fifty-two years in India, and planted many Egyptian colonies in order to civilize that country, perhaps it is a mythological allegory to express the relations between Egypt and Hindostan †. The conquests of Sesostris seem also to be magnified; and it is likely he only subdued part of Arabia and the country towards the Euxine. But when

* When Dr. Robertson, Disq. p. 298, argues against the ancient facts of Herodotus, from the comparatively modern silence of Arrian, his logic cannot be much applauded. He even forgets the national vanity of the Greeks, and their jealousy of the barbarian Persians.

† See Huet *Commerce des Anciens*, p. 40, Lyon, 1763, 8vo. This celebrated work has unaccountably escaped Dr. Robertson's observation, though it would have supplied him with many valuable materials for his production on ancient India.

Cambyses conquered Egypt it is known that many Egyptians fled to Hindostan; and the intercourse appears to have been common till that conquest, when it was impeded or annihilated by the aversion of the Persians to maritime affairs. The first voyage of discovery however seems to have been that undertaken by Scylax, by the permission of Darius, which led to the subsequent conquest of a part of Hindostan. Though the Egyptians probably invaded at different times the opposite Asiatic shores of Arabia, and the Arabians are perhaps the bearded captives represented in their ancient monuments, yet their conquests seem more naturally to have been restricted to the negro states, on the south of their dominions.

SCRIPTURAL ACCOUNT, &c.] If we consult the scripture, from its original and simple form, and the primitive nature of the events recorded, certainly the most ancient and venerable written record in the world, we shall find that the distant voyages of the Phenicians were the first that may be considered as leading to remote discoveries. However the original passages may have, in one or two instances, been mistaken by the transcribers of a work, the nature of which is very remote from commercial enquiries, so that the long voyages to Tarshish and Ophir are both said to have commenced on the Red Sea, yet the learned have long been convinced that *Ophir* was on the eastern coast of Africa, the very name itself being probably the original source of the word *Africa;* while the voyage to Tarshish was that to Tartessus, or the island of Cadiz, and the adjacent south-western part of Spain, a country then abounding with silver and other precious commodities: and the clear testimony of the Book of Jonah, who goes to Joppa, the only port on the Mediterranean belonging to the Hebrews, in order to embark for Tarshish, and finds a ship lying there bound for that country, will, by any man of common sagacity, be deemed conclusive. In these voyages the Hebrews were allowed to participate by the friendship of the Tyrians. The state of commerce at Tyre has been depicted in interesting colours by Ezekiel*. Among the most curious articles, were ivory from the isles of Chittim, fine linen and embroidered work from Egypt; blue and purple from the isles of Elishah; silver, iron, tin, and lead from Tarshish (all which metals are still found in Spain;) slaves, and vessels of brass, from Javan, Tubal, and Meshech; horses and mules from Togarmah; ivory and ebony from Dedan; bright or polished iron, cassia, and calamus, from Dan and Javan; spices, precious stones, and gold from Sheba and Raamah. A learned commentary on this portion of scripture would be a curious record of ancient commerce and discovery. The spices were in all probability from India, and brought at least for a considerable part of the way by inland trade: but that Tadmor in the desert, built by Solomon in a position no where indicated, though most probably between Palestine and his new havens on the Red Sea, should be the grand city of Palmyra, at such a distance from his own dominions, seems a mere gratuitous assertion†.

However this be, the Phenicians, by their intercourse with Greece and other parts of Europe, may be regarded as the first nation who disclosed a considerable portion of Asia, their native continent, to the curiosity of Europeans; and by the plantation of colonies in Greece established a focus of knowledge and civilization, afterwards to be diffused throughout Europe. As to the empire of the seas, idly affirmed by the vanity of Greek writers, to have belonged to successive Grecian states, the Corinthians, Ionians, tyrants of Samos, Phoceans, Athenians, &c. the exaggeration must be restricted to the

* Chap. xxvii.

† In the Syriac *Tadmor* is said merely to signify *a grove of palm trees;* so that the name is far from specific, and has no connection with the Greek Palmyra, a palm in that language being φοινιξ. The orientals ascribe many great mountains to the magic of Solomon. It is surprising to find Dr. Robertson, a divine, always speaking of the Jews; a name which cannot be used with any propriety till after the captivity of the ten tribes.

narrow

narrow limits of the Egean and Ionian Seas, which had alone been explored by the Greeks; the first real dominion of the seas having been that of the Phenicians; succeeded by that of their sons the Carthaginians, vanquished after repeated struggles by that of the Romans. As masters of the seas the Phenicians must also be regarded as the first authors of maritime discovery; and the sagacity and equity of modern criticism will set aside the nationality of the Greeks, who sufficiently evidence their own ignorance by regarding themselves as the only civilised people, while the liberal appellation of barbarians was bestowed on all other nations, not excepting even those who had far preceded the Greeks in the arts of civilization.

Greek Knowledge, &c.] But the discoveries of the Phenicians in Asia have perished with their historical records: and it is not to the commerce, but to the conquests, of the Greeks, that we must ascribe the commencement of the knowledge which the ancients acquired of Asia. That truly great monarch Alexander, whose foundations of commercial cities, and designs of diffusing intercourse and amity among distant nations, are far more glorious than his conquests, may be said to have been the first author of a clear steady progress in the discovery of Asia; and in establishing scientific connections between the two continents. His achievements in Persia and India; the voyage of Nearchus performed by his orders; the erection of three cities in the Panjab, (such foundations being always the fruits of his conquests, while many false heroes are only known as having destroyed cities;) the establishment of the kingdom of Bactria: the expedition of Seleucus to the Ganges, from which however, as he was not accompanied by a literary man, no information could arise; and other grand consequences of the victories of Alexander, first opened the wide regions of the east to the ardent curiosity, and recorded knowledge, of the Greeks. An antiquarian discussion of the progress of that knowledge would be foreign to the name of this memoir, which, after having investigated the original authors of these discoveries, shall be chiefly restricted to their resumed progress in modern times; and this portion of the enquiry has been treated by so many able writers from the Greek and Roman authorities, that little information could be added. The late excellent historian Dr. Robertson has discussed this interesting subject with his usual precision and ability; and if the reader likewise peruse the work of the learned Huet on the Commerce and Navigation of the ancients, which Robertson seems never to have seen, he will find, though sometimes stained with minute and pedantic eccentricities, such an additional treasure of information that little is left to any future inquirers. The commerce between Egypt, under the Ptolemies and Hindostan, contributed to disclose the coasts; while the inland trade opened sources of intelligence concerning the northern or rather central parts of Asia. Dr. Robertson has indicated the route of the Indian trade, which was at the same time partly maritime by the Caspian and Euxine Seas. Maracanda or Samarcand, situated on a river which falls into the Oxus, seems to have derived a part of its prosperity from the transit of this trade; and Seleucus Nicator is said to have entertained the magnificent project of opening a canal between the Euxine and the Caspian. An ancient historian has indicated a route to the country of the Seres by that of the Sacæ, in which perhaps he only copies Ptolemy*. By the route of Cabul commercial intercourse was opened between India, Bactria, and Parthia†. That with Persia was chiefly by the great route of Candahar; but there was a more easy passage by sea to the Persian Gulf, whence merchandise was conducted by caravans, on the camels emphatically called ships of the desert, to the Mediterranean, Palmyra serving as a great mart or trading station; whence alone could arise the surprising magnificence of a city, probably at first founded in an oasis, or verdant isle in the sandy expanse, but after-

* Amm. Marcell. xxiii. 6.

† Huet, 402.

wards

wards nearly covered with the increasing diffusion of sterility, and at all times receiving even the necessaries of life from the hand of commerce.

PTOLEMY'S GEOGRAPHY, &c.] But to the work of Ptolemy, written at Alexandria in the second century, little knowledge seems to have been added by the ancients. Agathodæmon, who executed the maps for Ptolemy's geography, lived in the fifth century, and entertained a literary correspondence with Isidore of Pelusium *. Agathodæmon also resided at Alexandria, and was chiefly eminent in mechanics: but as maps had long before become extremely common, it is to be supposed that he not only consulted the text of Ptolemy, but also the best maps of that period, for the winding of the shores, and courses of the rivers and mountains, which no description could accurately convey †. The Peutingerian Table may also be consulted for the knowledge of the ancients in Asia, though its plan of a long roll disfigures all the positions and objects, and it is chiefly valuable for the itinerary distances. The last sheet of this table, in the accurate edition of Scheyb ‡, presents India as far as the supposed mouth of the Ganges; but the objects are so much distorted as to be of little geographical value. This last sheet is divided by the chain of Imaus, passing from right to left, while on the top, right hand, and bottom, the ocean is delineated, with Taprobane or Ceylon in the latter. The Ganges joins the ocean on the right hand, which, from the position of Taprobane, should be the Eoan or oriental ocean of the ancients. On the southern ocean is the town of Muziris, with a temple of Augustus in the vicinity, which might shew frequent intercourse, and account for the number of Roman coins found in Hindostan. Palibothra is oddly placed between the mountain Paropamisus and the Ganges. On the N. of the mouth of the Ganges is the estuary of the river Calincius, with the town of Magaris. At the top of this sheet, on the north as it may be called of the mountain Imaus, are the town of Antiochia, and the river Araxes. In short such is the confusion of this itinerary table, that it may be only said to present some curious hints concerning ancient geography, especially the distances from one place to another; sometimes however so wide as 500 to 630 miles. The learned editor has, as not unusual with gentlemen of that profession, carefully avoided any discussion of the most important topic to be considered, namely, the precise age of the table itself, which he fondly affects to regard as an original, compiled and written in the time of Theodosius the Great, A. D. 393; never reflecting that, if drawn at that period, the characters would all have been Roman capitals, the only mode in solemn and public writing till the tenth century; when the form called small Roman, like modern printed books, began to be introduced, and continued for at least two centuries, the Doomsday book of England being a noble specimen. It would be difficult to trace the appearance of what is called the Gothic letter till the thirteenth century; and the mingled writing of this celebrated monument, far from having the smallest odour of the age of Theodosius, may be assigned to the middle of the thirteenth or beginning of the fourteenth century. But an error of one thousand years is of no moment among antiquaries. The Peutingerian table is therefore only a modern, and probably very inaccurate transcript, from some Roman

* Fabricii Bibl. Antiq. c. 5.

† Sesostris king of Egypt, a great conqueror, is said to have invented maps; of which he gave the first example to the Scythians, as well as to the Egyptians. *Eustath. in pref. ad Dionys.* They were common from very early ages, even savages drawing rude maps; so that a grave German author is mistaken when he ascribes this invention to the devil, who could only thus, in his opinion, have shewn Jesus Christ *all* the kingdoms of this earth.

‡ Vindob. 1753, large folio.

itinerary of the lower ages of the empire; but at what period the original was executed cannot be ascertained *.

The fantastic labours of Cosmas, an Egyptian merchant in the reign of Justinian, in which he attempted to shew that the earth was not spherical, but an oblong plane, added nothing to the knowledge of geography, except a hint concerning Male on the modern coast of Malabar, while the Malanga of Ptolemy is on the opposite coast of Coromandel; and some intelligence concerning the commerce of the Persians with Hindostan. From other authorities we learn that this commerce was not only conducted by the Persian Gulf, but also by means of a celebrated mart in Carmania, the modern Kerman, called the city of Girofta; perhaps the modern Siraf, the province of Laristan being a recent division, and it is well known that Siraf was celebrated in Persian commerce before the mart was transferred to an adjacent isle †.

General Observation, &c.] In estimating the knowledge of Ptolemy, and other ancient geographers, an indispensable observation must be made; that, compiling intelligence from all the documents which they could procure, without enjoying the instruments or other means of modern precision, they would repeatedly insert the same identical object under various appellations; naturally supposing that the different names, received or imposed by different travellers and navigators, belonged to different objects. Even with the modern lights of geographical science it is sometimes difficult to avoid this confusion; and among the ancients, who had no means of computing longitudes, except by itinerary measures and the yet more uncertain courses of ships, these errors may be conceived to be extremely numerous. The errors in the early maps of modern times may often serve to explain those of the ancient. As a different name conferred by Spanish, Portuguese, French, or English, mariners, was no unfrequent source of error; so among the ancients the Phenician, Grecian, Roman, and native appellations. But not to pursue this topic it will be sufficient to observe that the knowledge of the ancients cannot be said to have exceeded that of Ptolemy, whose work continued to be a standard, not only among the Arabs, to whom the torch of science had been handed by the Greeks of the lower empire, but even in Europe till the discovery of America; and the great Colon was instigated, by the erroneous extent of Ptolemy's longitudes, to expect to find India where he found America. Nay till the middle of the sixteenth century the work of Ptolemy, with a few modern additions, was considered as the sole standard of geography; while in Asia the utmost extent of his knowledge was the country of Serica, now called Little Bucharia; and the Sinæ, or the people towards Tanaserim, on the south ‡.

Arabian Discoveries.] To Europeans no further part of Asia was disclosed till the travels of Marco Polo in the thirteenth century. The general idea was, that beyond Little Bucharia, and an oblique line drawn from thence to the south of Tana-

* This learned editor, who appears to be a complete stranger, not only to MSS. and diplomas, but also to sound ratiocination, gravely argues, p. 64, that all monuments that do not correspond with this table are false, and must of necessity be more modern! In the Cottonian library there was or is a MS. of Dicuil, called *Mensuræ Terræ*, composed about A. D. 800, perhaps the prototype: but the work is lost and only the preface preserved. More probably, however, it belongs to the anonymous author of the Annals of Calmar, (Urstisii Hist. Germ. i. 2.) who says, *Anno MCCLXV, mappam mundi descripsi in pelles duodecim pergameni:* there being now precisely eleven skins, while the first, containing the greater part of Britain, Thule and Scandinavia, is lost. This coincidence is such as would have opened the eyes of the blindest editor; and it only remains to compare the original MS. of the Annals of Calmar with the Peutingerian table.

† Huet, 50. 56. But see La Rochette's map of the Marches of Alexander.

‡ Dr. Robertson has justly observed from the Ayeen Akbery, vol. ii. p. 7, that Cheen was an ancient name of the kingdom of Pegu, whence the name of Sinæ, conferred on the people of that and the adjacent countries on the S. E.

serim,

serim, there was a wide ocean; and thus not above one third of Asia was known to Europeans *. But in the east the discoveries began to be pursued at an early period; for the diffusion of the Mahometan religion having lent a new impulse to human action, we find that two Arabian travellers in the ninth century visited China, and the intermediate countries. The Arabian geographers also display a far more extensive acquaintance with Asia and Africa, than could be obtained by Ptolemy; but in the ignorance of the middle ages only the works on medicine had been translated, and some popular tales imitated during the crusades; while the Arabian works on geography were neglected, perhaps from being considered as in some degree connected with the rise, progress, and spirit of their religion. The history of the discoveries of the Mahometans would form a very interesting topic, as they have been traced much farther to the south in Africa, and much farther to the east in Asia, than there was reason to expect; their religion being more adapted than any other to the perpetual and invincible habits and prejudices of the orientals. Till such a work can be published, the Africa of Edrisi, with the supplemental extracts from other Arabian authors by Hartmann, might serve as a model for a similar publication concerning Asia, which would be infinitely more useful than the single work of Abulfeda, or any other Arabian geographer. Even the celebrated Arabian tales, which delight age and wisdom as well as youth and beauty, the learned as much as the illiterate, might afford some curious hints on this interesting subject, many of them having been composed prior to the crusades, as appears from European imitations. The crusades, and the foundation of the kingdom of Jerusalem, must not at the same time be forgotten, among the causes of modern intercouse and acquaintance with Asia. But though the kingdom of Jerusalem began in the year 1099, and may be said to have lasted till 1291, when Acca, or corruptedly Acre, was taken by the sultan Kalil, yet the princes appear to have been too much occupied in the defence of their own territories, to pay any attention to foreign discovery. But before proceeding to the celebrated epoch of the travels of Marco Polo, which first disclosed true ideas concerning the vast extent of this continent, it will be proper to commemorate a few facts and incidents anterior to that period.

ALFRED KING OF ENGLAND.] The great Alfred, who ascended the throne of England in the year 871, and died in the year 900, not only contributed to extend the knowledge of the north of Europe, by preserving the voyage of Ohter †, but sent Suithelm, bishop of Shireburn, with a present to the shrine of St. Thomas in India, near Madras on the coast of Coromandel; and the ambassador returned in safety with some specimens of the productions of the country ‡. As that monarch, perhaps the wisest and most truly great who ever adorned any country, seldom acted without scientific or beneficial views, it may be surmised with probability, that his extensive mind had formed some prospect of commercial intercourse, or at least of scientific discovery. As Ceylon appears at that time to have been the great mart of Indian traffic, in which it was afterwards supplanted by Malacca, the cause being, as Cosmas informs us, that Ceylon was nearly at an equal distance from Persia on the west, and Siam or country of the Sinæ on the east; Suithelm, in passing to the furthest coast of Coromandel, on pretext of a mere religious embassy, may have been instructed to examine that grand staple, and report the state of commerce, and the modes of navigation. The grandeur of this idea may be thought to surpass the knowledge of the age; but certainly does not exceed the sublime mind of the monarch to whom t is ascribed,

* See the map of the world as known to the ancients, in the *Recherches sur les Scythes*, Paris, 1804, 8vo.

† See King Alfred's Translation of Orosius, London, 1773, 8vo. from which however it would appear that the king could add nothing to the account of Asia, given in the original.

‡ Saxon Chron. &c. It is not improbable that the voyage of Suithelm may lurk in some Saxon MS.

alike estranged from idle or superstitious motives, and expansive beyond the utmost extent of his period.

RABBI BENJAMIN.] It would be idle to detain the reader with the travels of Rabbi Benjamin, a Jew of Tudela in Navarre, about the year 1170. Some have supposed that these travels are a mere compilation from the reports of several Jewish merchants, who had travelled in pursuit of their trade. The work is full of fables concerning the number and power of the Jews: and his imaginary island of Nicrokis, towards the mouth of the Euphrates, six days' journey in length, the grand seat of commerce between Persia and Hindostan, shews that no credit can be given to his descriptions; there being no vestige of such a name, or isle, in any relation or treatise of geography: and the production of Benjamin only gives an additional proof of the singular and innate propensity of the Jews to falsehood, fiction, and credulity.

ORIGIN OF MODERN DISCOVERY.] But at length the discovery of Asia begins to dawn; faint streaks of light begin to glimmer in the east, and will speedily be followed by the radiance of the rising sun. The crusades, and the yet existing kingdom of Jerusalem, continued to turn the attention of Christendom towards that quarter, when the conquests of Zingis emperor of the Mongols, A. D. 1176—1227, either threatened destruction to that kingdom, or promised a powerful assistance against the enmity of the Turks and Arabs. This link in the chain has been forgotten by former writers, who seem surprised that the pope should have sent messengers to the successors of Zingis; and even ridicule the idea of converting the Mongols to the christian faith *! In a convocation held at Lyons by pope Innocent IV., A. D. 1245, it was determined to send messengers to the new dynasty of victors; and they were chosen from the severe and new institutions of the orders of Francis and Dominic, not averse to martyrdom in the first fervour of their zeal; and whose religious habits and austerity of manners might, it was presumed, not only enable them to encounter the fatigues of so long a journey, but might save them from personal outrage, as a court whose manners were little suspected to be then nearly as civilized as any in Europe. Among the friars chosen on this important occasion, Giovanni de Plano Carpini and Ascelin reported their relations on their return; and they have been preserved by the writers of that period †. The former travelled by the north of the Caspian, and reached the court of the emperor of the Mongols, in the country to the north of Cathay or China. Karakum, the early seat of the Mongol emperors, whose power was far more extensive than that of the Romans, was situated on the river Ouguin, or more probably on the river Orchon, which flows into the Selinga. When the magnitude of the empire of Cathay or China, containing more than one third part of the human race, began to be disclosed

* An extract from Dr. Robertson may amuse the reader, nor is it destitute of instruction, as it shews how history is written by the greatest masters.

"All Christendom having been alarmed with accounts of the rapid progress of the Tartar arms under Zengis Khan, Innocent IV. who entertained most exalted ideas concerning the plenitude of his own power, and the submission due to his injunctions, sent father John de Plano Carpini, at the head of a mission of Franciscan monks, and father Ascolino, at the head of another of Dominicans, to enjoin Kayuk Khan, the grandson of Zengis, who was then at the head of the Tartar empire, to embrace the Christian faith, and to desist from desolating the earth by his arms." Hist. of America, i. 45. ed. 1803. He then mentions the astonishment of the Asiatic conquerors at this mandate of a priest! 1. Zengis Khan was not sovereign of the Tartars, but of the Mongols who had conquered the Tartars. 2. The two monks mentioned were not at the head of missions, but all travelled as equals and brothers. 3. The popes had more knowledge and policy than to send such idle messages, the object was the defence or restoration of the kingdom of Jerusalem. 4. The Tartar empire is the Mongol empire. 5. Kayuk, or rather Gayuk, could not be known to the pontiff, as he was not crowned till after the arrival of the messengers. Here are five historical errors in one sentence: and in the account of South America the reader will find three, of the greatest geographical import, in three successive sentences.

† See Vincent de Beauvais, Spec. Hist. lib. xxxii.

to astonished Europe, it is no wonder that its celebrity, though still wrapt in a veil of obscurity, began to attract the attention of poets and writers of romance. The existence of the grand nation of the Manshurs beyond the Mongols, who had themselves been lost in the more western name of Tatars *, was now discovered; and even the Samoiads, the farthest tribe in the north of Asia, had become known to the Mongols from their settlement at Tobolsk in 1252. The fabulous Eoan ocean of the ancients began to disappear; while rude tribes, warlike nations, and vast civilized empires, emerged from the imaginary waves.

Previous ignorance.] The ignorance even of the Byzantine historians concerning the oriental countries is surprising; and the settlements of the Genoese in the suburb of Persia, and on the Black Sea, had contributed little or nothing to increase the fund of European knowledge. The later Greek historians generally bestow the indiscriminate name of Indians upon the southern nations of Asia; while the classical terms of Scythians and Huns were equally misapplied. But the commerce of the Venetians with Alexandria and the east led to an enterprise of more importance, undertaken by a native of Venice, which shall presently be detailed with the minuteness due to its consequence.

Ruysbroek, 1253.] Meanwhile, St. Louis of France, the ninth king of that name, having returned from an unsuccessful crusade in 1254, or, probably, during his absence on that crusade, which began in 1249, his captivity having commenced in 1250, sent a chosen messenger to Mangu, emperor of the Mongols. As, by the best records, this embassy happened in the year 1253, while the king was still a captive, its motives, which have been wisely imputed by the gravest historians to a wish for the propagation of the Christian faith, and even the conversion of the emperor, arose from a very different object. That wise monarch knew that, if the victorious arms of the Mongols could be directed against the Saracens, his deliverance without ransom might speedily have followed. With this view William of Ruysbroek, so called from a village near Brussels, but whose name has been corrupted by French and Italian writers to Rubruquis, proceeded by Constantinople to the Crimea, where he found a remnant of the ancient Goths speaking the Gothic tongue; and thence by land towards the great river Etilia, being the Volga, so called by the Tatars, which he describes as the largest river he had ever seen, and as emptying itself into a large lake or sea, which, to encompass, would require a journey of four months †. He afterwards passed the Yaik, and travelled by the north of Turkestan, and the lake of Balkash. The original country of Prester-John seems to have been that of a northern lama, the worship of that creed somewhat resembling the Christian. Tangut and Tibet are also objects of Ruysbroek's inquiry; nor does he neglect the grand empire of Cathay. But his own route lay far to the north, as he pursued the direct course to the court of the Mongol emperor at Karacum. But our attention must now be directed towards the chief author of the discovery of Asia.

Marco Polo. 1271 — 1297.] The maritime preponderance, wealth, and enterprise of the Venetians had now extended their commerce in all directions. The powerful Hanseatic league, formed in 1255, a singular maritime republic which overawed the sovereigns of the north, at the same time that it spread commerce and civilization through their dominions, but whose influence has not been duly estimated by modern historians, had greatly contributed to the consumption of oriental articles in Scandinavia, and the other wide regions on the Baltic. These precious products were

* This orthography is now universally adopted among the learned, as being the real indigenal and oriental appellation; while *Tartar* proceeds from a quaint application of the Latin *Tartarus*.

† Forster's History of Discoveries in the North; London, 1786, 4to. p. 98.

generally

generally conveyed by land, through Tyrol and Suabia, to the Rhine, the central river of the Hanseatic States. By the increase of commerce the spirit of enterprise was naturally enlarged, and the preponderance of Venice was felt and celebrated through all the commercial world, when Marco Polo, a noble Venetian, commenced his celebrated journey, which is not only of the greatest importance in itself, but which, from the ideas suggested to Colon by the perusal, as we learn from his life written by his son, contributed in no small degree to the most celebrated of all modern discoveries, that of the vast continent of America.

The father and brother of Marco had returned from the east in 1269 after an absence of many years *. They appear to have been jewellers, like honest Tavernier; and after a short residence at Venice, the father determined to return to the east, and to take his son, then nineteen years of age, as his companion on this memorable journey, begun in 1271 or 1272. The emperor Kublai, successor of Mangu, but who had resigned the western parts of the empire to Hulagu, assumed an interest in the fortunes of our young traveller; and observing his intelligence and fidelity, afterwards employed him, as a foreigner wholly dependent on his favour, in weighty embassies and solemn affairs. He had learnt to speak and write four languages, generally used among the Mongols and their neighbours; and returned to Venice with his father and uncle in 1297, after an absence of twenty-six years †; during seventeen of which, Marco had been in the service of the Mongol emperor. He was now forty-six years of age, and probably had so far forgotten his native language, that he required some assistance in the composition of his work, the fidelity of which was, however, always attested by the father and uncle, and has been amply confirmed by the light of recent knowledge.

His Narrative.] But before proceeding to give a brief view of his chief discoveries, it may be necessary to consider the original narrative itself; and it is to be regretted that a new and authentic edition is not published of a work so important to the progress of geography.

It seems little probable that Marco, who had passed his life in the east, and been accustomed only to write and speak the oriental tongues, should have dictated this work in Latin, a language foreign to his original habits and pursuits; while most probably, soon after his return, he resumed the language of his country; and the record to be wished would be in the Venetian dialect. Muller, a German, who has published a pedantic, but useful edition of these valuable travels ‡, has rightly rejected the idea of Ramusio, and shews that the Latin translation is by Pipino (Pepuri), a contemporary Dominican monk. Yet it is generally known, that the edition given in the celebrated collection of voyages, published in Italian by Ramusio, is not the original, but a version from the Latin translation. This is not a pedantic question, as there are many variations not only in the names, but in important passages. A very curious and rare Italian edition is now before me, printed at Trevigi in 1590, and which professes in the title to be a wholly new edition, restored to the genuine order of the narrative. Though Ramusio published his work at Venice, yet he adopted the elegant and general style of the Italian language; while as Trevigi is in the territory and immediate vicinity of Venice, it will not be unreasonable to expect that

* They set out 1250. Orig. MS. Of course, as Nicolo had not seen his son, Marco must have been born in 1251, and in 1269 was in his nineteenth year.

† The original MS. is followed as extracted by Zeno, in his valuable notes on the *Eloquenza Italiana* of Fontanini, Ven. 1753, 2 vols. 4to.

‡ Col. Brand. 1671, 4to. His book *De Cathaia*, in the same volume, is dedicated to Castell, the celebrated publisher of the Polyglot; and he mentions a Mr. Murray as his own countryman. Perhaps they were both of Scotish families established in Pomerania.

this edition is the most authentic, especially after the following short advertisement of the publisher: "I did not wish, discreet reader, to present this book in a more polished or concise style than that in which it was written by the author, as well that you might hear his own words, in his own native dialect, as from my aversion to diminish the authority of Marco Polo by my phrases, which would, perhaps, appear less clear than his own; for in describing the countries which he had seen, and in the sincerity and truth of his narrative, he had no equal in his time *."

This edition of Trevigi, 1590, was published after Ramusio had completed his collection; and the advertisement must allude to his having sacrificed the truth and simplicity of the narrative to an elegant translation from the Latin. After some examination, it appears to me that this is the original work of Marco Polo, the loss of which has been regretted from the time of Purchas to the present hour; for that venerable editor has expressed his pain in translating from the Latin, which he found extremely corrupt, both in the names and in the sense. By comparing a good manuscript of the Latin translation in the library of the electors of Brandenburg, now kings of Prussia, Muller has explained some passages, but had not seen this original edition; which, being no stranger to the original historians of Venice, I may safely pronounce to be in the Venetian dialect, as was to have been expected. There are besides many intrinsic marks that this is the original narrative. It it is often written in the name of the three travellers, the father, son, and uncle: as ch. viii. "we have written this history, that all may be certain that Nicolo, Mafio, and Marco, could hear, see, and know the things which are written in this book, compiled by them:" and when the travels of Marco, which were the most extensive, are indicated, "*Io Marco*" is put, "I, Marcus, was in that place, or saw such an object." The names of places and persons, which are often widely different from those in the other editions, seem at the same time more genuine: and the collation of a remarkable passage in the text, as it stands in this edition and in that of Ramusio, will sufficiently convince the reader of their total discordance †.

* It is no wonder that this curious edition has escaped all the editors and commentators, being so closely printed as only to fill fifty-seven leaves; whence, like a pamphlet, it was very subject to be lost; while, being intended for common readers, the copies were of course destroyed by frequent use. It is not divided into books, but into one hundred and forty-six chapters; and instead of the usual introduction, begins with a description of Trebezond, a chapter out of its place, as the regular narrative begins with the second chapter, which is however, wholly different from the edition of Ramusio; beginning thus, "*Quando il grande Chan Signor de tutti li tartari, e de tutte sue provincie, e regione, e regni, cioe de una gran parte del mondo, hebbe inteso le conditione de li Christiani, monstro in lo viso che molto li piacessi:*" while Ramusio, as well as the Latin translations, begin in the following manner: *Dovete dunque sapere che nel tempo di Balduino Imperatore di Constantinopoli, doue allora soleva stare un Podesta ai Venezia, per nome di Messer lo Doze, correndo gli anni del N. S. MCCL. Messer Nicolo Padre di Marco, e Messer Maffio Polo fratello di detto Messer Niccolo, nobili honorati chevi di Venezia, travandosi in Constantinopoli con molte loro grandi mercantie, &c.*

The very transposition of the chapter on Trebezond, which had probably been omitted and copied on a loose leaf, seems to evince that the editor had blindly followed the MS. without any alteration. This chapter should follow chap. ix. on Little Armenia.

† *Edition of Trevigi.*

In questa isola son idoli che hanno el capo de louo alcuni l'ha de porco, alcuni de molton, alcuni de chan, alcuni hanno uno capo e quattro fazze, alcuni ha tre capi l'uno sotto collo, l'altro sotto la spalla, e laltro sotto l'altra, e alcuni ha quattro mane, e alcunix. Quello idoloche, tenuto lo piu bello, si e quello che ha piu mane, e chi li domanda, perche fanno tanti idoli, e si perversi e diversi. Elli responde che cosi fece li suoi predecessori.

Ramusio.

In questa Isola di Zipangu, e in altre vicine, tutti i loro idoli, sono fatti diversamente perche alcuni hanno teste di Bovi, altri di Porci, altri de Cani e di Becchi e d'diverse altre maniere e vene sono alcuni, ch'hanno un capo e duo i volti, altri trè capi, Cioè uno nel luogo debito, gl'altri due sopra cada una delle spalle altri c'hanno quattro mani, alcuni dieci, e altri cento; quelli che ne hanno più, si tiene che habbiano più virtù e à quelli fanno maggior riverentia, e quando i Christiani gli dimandano, perche fanno gli suoi idoli cosi diversi, rispondono, Cosi nostri padri e predecessori gl'hanno lasciati.

These

These travels having been justly regarded as the chief source of the grand modern discoveries in Asia, and even of those in America, it will be proper to lay an abstract of them before the reader; and the further to gratify his curiosity, this abstract shall be taken from the genuine edition of Trevigi, which will partly enable him to estimate the variations and corruptions in the other editions.

ABSTRACT OF POLO'S TRAVELS.] In the first chapter on Trebezond, which, as already mentioned, should follow the ninth, the author mentions that he saw a large flock of tame partridges conducted from Ganeza, at the distance of three days' journey. The work properly begins with the second chapter, which is the third in the common editions; but the Venetian is rather abrupt, and perhaps the first leaf was wanting in the manuscript, and mistakenly supplied with the account of Trebezond. The Chan of the Mongols desires the brothers, Nicholas and Matthew, with Cogobal, one of his barons, to proceed as his ambassadors to the pontiff of the Christians. Cogobal dies on the route; but the brothers arrive at Giaza in April 1269, having met with so many impediments that they were three years on the journey. They find the pope dead (Clement IV. died 1268, and Gregory X. was elected 1st September 1271, but he did not arrive in Italy till 1272;) and proceeding to Venice, found Marco the son of Nicolo, aged *fifteen* (nineteen) years. "This Marco is he who wrote this book." As they waited two years for the election of the pope, the real date of their arrival must be 1269. The three travellers proceed to Giaza and to Clemenif, in the dominions of the Chan, a journey of three years and a half, on account of the wide rivers, the rain, and cold. Marco studies the four languages there spoken, and is greatly favoured by the Chan; who, upon one occasion, sent him upon an embassy which lasted fourteen months. To please this prince, who was inquisitive concerning foreign countries, Marco took notes of all that he saw, and received additional marks of favour, during seventeen years that he remained in the court of the Mongols; his repeated embassies having enabled him to compile this account of the oriental countries.

Yet the two brothers and the son wished to return to Venice, but could not obtain permission. At length Belgoma, the queen of an Indian monarch, called Argon, having died, he requested a wife from the Chan, who selected a lady of seventeen, called Cazatin, and permitted the Polos to accompany her and the Indian ambassadors. Fourteen vessels were equipped; and after a navigation of three months, they arrived at an isle called Lava, afterwards to be described. Another voyage of eight months conducted them to the court of Argon, who was dead, so that the lady passed to his son. Acatu, regent, during his minority, granted an escort to the Venetians, who arrived at Trebezond, whence they passed to Constantinople, Negroponte, and Venice in 1297. Then follows the passage already quoted, that these facts are premised to convince the reader of the authenticity of these travels. Such are the first eight chapters of this edition, corresponding with the first ten of the others.

The ninth chapter treats of Little Armenia, in which lies the city of Giaza, a grand maratime mart where Polo landed. The chapter on Trebezond ought to follow. He then proceeds to Turcomania, of which the chief towns are Chirino, Cyserie, Senasto, and the place where St. Blase was martyred. Greater Armenia follows, having the province of Mozul on the east, where there are many Jacobine and Nestorian Christians. On the north, Armenia borders on Georgia, which is described. In the fourteenth chapter, Polo delineates Mozul at more length than in the Latin, and particularly mentions *Musolini*, or muslins, and spices which arrive in this province from India. Proceeding still, as he has already explained, towards the south, he describes Baldach or Bagdad as the seat of the caliphs, which carried on great trade with India, the intermediate marts being Leissi, and Baschra or Bassora. The curious details on the manufactures are totally omitted by the ignorant monk who made the Latin translation.

Cubli, the great Chan of the Mongols is here mentioned for the first time; and the narrative is connected and complete, while in the Latin it is broken and corrupted. Next appears the city of Totis, which should be Toris or Tauris, as in the Latin. The miracle, chap. 17, corresponding with 18 in the Latin, occupies three pages; while in the Latin it only fills half a page.

Persia follows, and here no less than two chapters are omitted in the Latin, though they depend on Marco's personal testimony; chap. 20, which now corresponds with chap. 19 of the Latin, describes the provinces of Persia; the seventh is Corcata, the eighth Trichay or Trinkay; for Curmosa in the Latin read Arcomes. The account of Jasdi or Jasoi is not divided from the rest, nor is that of Crerina which produces turquoises and other precious stones; the names of which not being understood by the Latin translator, are totally omitted. Chap. 21 corresponding with 22 Latin, is far more ample, and shall be literally translated as one specimen, after premising that Crerina is probably Kerman, and its capital Kermashir, whence there are eight days' journey, according to our author, from Jasdi or Yesd*.

"When a man leaves Crerina, he travels for eight days, always finding cities and castles, and many habitations, and no small pleasure in travelling through such pleasant countries, where he may find an infinite quantity of game. When you have ridden for seven days you find a considerable descent, but abundance of fruits; for in the ancient times there were many habitations in those parts, while, at present, only herds are found conducting their cattle and sheep to pasture. From the city of Crerina to this descent, there is so intense a cold in the winter, that men cannot support it although they be well clothed. When you have descended for two days you find a wide plain, at the beginning of which is a city called Adgamad, which, in the ancient times, was noble and great, but it has been destroyed by the Tatars. This plain is very warm, and the province is called Reobarle; its fruits being dates, apples of paradise, pistachios, and others. The oxen are large, with short and thick hair, the horns short, thick, and sharp, and a hunch between the shoulders about two spans round. When they are to be loaded, these animals kneel like camels, rising afterwards, and bearing a great weight. There are here some sheep as large as asses, the tail being so broad and thick as to weigh thirty-two pounds, and is excellent food. In this plain are cities and castles, having high and thick walls of earth to defend them from their enemies. These enemies are called Caraoni, their mothers being Indians, while the fathers were Tatars. And when this people wish to rob, they, by incantations of demons, can obscure the air, as if it were midnight, that they may not be seen at a distance†. This obscurity lasts for seven days; and they know well the passes, marching the one after the other to the number of perhaps ten thousand, so that none can pass without encountering death or captivity, killing the old men and selling the young as slaves. Their king is styled Negodar: and I must tell you that I, Marco, was almost in their hands, in danger of being taken and killed in this darkness, if I had not fled to a castle called Ganosalmi. And many of my companions were taken and killed. This plain which I have mentioned continues for five days' journey towards the south. At the end of the fifth journey is found Decusclivo‡, and it continues for twenty miles, and is a bad and dangerous road on account of the robbers who despoil travellers. At the end of the twenty miles there is another plain of great beauty, which continues for two days' journey, and is called the plain of Formosa. Here are many streams and plantations of dates."

* The Latin puts seven.

† Fogs probably from the salt lakes.

‡ Perhaps an error for declivo, a declivity.

Cormos.] He then proceeds to state that the traveller now reaches the ocean, and finds a city called Cormos, with an excellent port, rich in Indian traffic; being also the capital of a kingdom of which the sovereign was called Remneda Nocomoit.

It is not the intention of the present inquiry to illustrate the various names and positions of Marco Polo, which would itself require a large and elaborate dissertation, but merely to indicate the leading features of his journey. Having mentioned that the people of Cormos are Mahometan negroes, he adds, that he shall not at present enter India, but return to the north. He informs us, that the old man of the mountain, or chief of the assassins, was taken and beheaded in 1262 by Alau, Chan of the Tatars. Thence he passes to the city Sopurgaim, and that of Balach, in which he says, that Alexander wedded the daughter of Darius; thence travelling N. E. he finds a castle called Titham, and the city Echasen, seated in a plain. Leaving this country, there is a desart of three days, after which you arrive in that of Balassia. The order is here totally different from the Latin. Ch. 24 of the original, corresponds with ch. 29 of the Latin, but with many important variations. Balassia is well known to be Badakshan, where are found the Balay rubies. Bassia is ten days' journey to the S. of Balassia, while in the Latin the direction is not specified; nor is it in that of Caassimur, which lies to the S. E. of Bassia, being Cashmere, whence Polo again returns from India, leaving that country for a separate description. A controverted passage may afford another specimen.

"When a man leaves Balassia he travels for three days between the N. E. and the E. along a river which terminates Balassia. Here are many castles and habitations. The men are valiant, adore Mahomet, and have a distinct language. At the end of these three days there is found a province, three days' journey in length and breadth, which is called Vocan. The people have also a distinct language, are Mahometans, and subject to the king of Balassia. Leaving this country he will proceed for three days among mountains, always ascending, till he find a large mountain with a most beautiful river, and the best pastures in the world. Here the leanest beast would become extremely fat in ten days. There is abundance of wild beasts, and of wild sheep, whose horns are sometimes ten spans in length, sometimes six, sometimes four; and of these horns the shepherds make various utensils. He will then travel on the upland plain, for twelve days, without finding any habitation or grass, so that the travellers must bring provisions. And it is said that in the great cold here found the fire is not so clear, nor of such heat as elsewhere, so that cookery is slow. Let us leave this, and relate what objects occur between the N. E. and the E. Travelling for forty days among mountains, vallies, and hills, between the N. E. and the E. you must pass many rivers and desarts. During these forty days there is neither habitation, nor food; and travellers must bring all with them. This country is called Bessor (read Bellor); the people living on high mountains, adoring idols, and being very savage. They live by hunting, are clothed in skins, being of very wicked and cruel dispositions. Let us leave this province and proceed to Chascar," &c. In this passage there are also remarkable variations; and the plain of Pamer, mentioned in the Latin, is omitted, perhaps by the neglect of the transcriber: so uncertain are the materials upon which, in our total ignorance of Bucharia, geographers are obliged to build at the present day.

Cashgar, &c.] The description of Cashgar is more ample than in the Latin; and the same chapter includes the city of Saurmaratam, in the Latin Samarcham, but probably not Samarcand. Thence he proceeds to Barcan, in the Latin Carcan; thence to Cota or Koten, specially mentioning that it abounds in cotton, the name being probably derived from that of the province. Poim produces precious stones.

Ciarchian is mostly a sandy desart. On leaving this province you pass a sandy desart of five days, after which there is another prodigious desart; and at the entrance a large city called Job (Lob) where provisions must be taken for a month; but the entire desart is so vast that it would require a year to pass. For twenty days good water is found; and, at the end of the thirty, you discover a city called Sancechian, which belongs to the great Chan, being in the province of Tangut. Such are the first ideas of the great desart of Cobi, which was totally unknown to the ancients. After a description of the manners of Tangut, he surveys Camul or Chamil, which is followed by Ringuitalas, while the Latin has Chinchinthalas, and Sucur; these three provinces as he mentions being included in Tangut, and their mountains produce rhubarb in great quantity. The chief city of Tangut is Campion, where the three Polos remained seven years occupied in trade. Twelve days after leaving Campion appears the city of Ecina or Etzina, at the beginning of a sandy desart, which spreads towards the north, and requires provision for forty days. Being passed you arrive at Catacora, rather Caracoram or Karacum, where Polo informs us that the first emperor of the Mongols, whom he always calls Tatars, was proclaimed. He adds an account of Zingis Chan, and of Cublai the then emperor, and of the tombs of the monarchs in the mountain of Althai. The description of the manners of the Mongols is not a little interesting. On leaving Karacum, towards the north is found the plain of Barga, forty days' journey in extent; the people, called Nechritt, living by the chace. After these forty days you reach the ocean: but this must be a mistaken report.

TANGUT, &c.] Polo now returns from the north, and says that five days' journey to the east of Campion is found Ergivul, which also belongs to Tangut. He seems greatly struck with the number of Nestorian christians in Tangut. From the city of Ergivul travelling to the S. E. you may proceed to Cathay, where the first city is Sirigai. Here are cattle of enormous size, with hair three spans in length, who labour the ground with great force and expedition. The musk animal also appears, and is tolerably described, particularly the tusks. Here are also large pheasants, whose tails are from seven to ten spans in length. At the distance of eight days' journey to the E. of Ergivul is another province of Tangut called Egregia, the chief town being Calatia. The territory of Prester John also adjoins to Ergivul, his name at the time being Zorzi or George, who maintained a connection with the great Chan: this country produces lapis lazuli. There are here several variations in the Latin. Ch. 60 of the original corresponds with 65 of the Latin. At Ciandul is a large palace of marble and free-stone, belonging to the great Chan, with a walled forest of fifteen miles in circuit. Book 11 of the Latin begins at ch. 62 of the original. The account of the court and magnificence of Cublai Chan is minute and interesting. He passed three months of the year in the city of Pekin, called by the Mongols Cambalu, or the city of the Chan. The palace is described, but here is no hint of the great wall of China. In ch. 69 he mentions that Cambalu is at the distance of two days from the ocean, a circumstance omitted in the Latin; and the detail concerning the officers of the court is more ample. The account of coal found in the northern provinces of China is very just and striking. The second book dedicated to the Mongol court should here terminate. Ch. 27 begins towards the end of ch. 73 in the original. "The great Chan desired that I Marco should proceed on an embassy towards the west, so I departed from Cambalu, travelling towards the west for fourteen months; and I shall now relate what I found and saw with my own eyes, on my progress and my return." The narrative of the travels is now resumed; but what regards China may be omitted. In ch. 57 he distinguishes the great region of Mangi, or the southern half of China, from Cathay or the northern. In ch. 78 the king Dor is foolishly translated Darius by the monk. The city Cianfu of the Latin is here Cancianfu.

After Sindinfu, or Sindirifu as in the Venetian, there is an account of the province of Chelet, which in the Latin is called Thebet, which immediately follows. Caindu is on the west, an extensive country belonging to the great Chan, which produces turquoises and pearls, with abundance of fish from a lake. Caindu is bounded by the river Brius; beyond is Earata, a large country governed by a son of the Chan. The city of Lazi is afterwards described, the money being white shells found in the sea. The province of Carian follows, so called from the capital, the king called Cocagio being also a son of the great Chan; this province abounds in gold and silver. Subject to the great Chan are also Cariti and its chief city Nocian *. That of Michai borders on India. Mien is likewise subject to the great Chan; whose order of march is afterwards described.

The dryness of this discussion must be excused from the curiosity and importance of the subject. In ch. 94, which corresponds with book ii. ch. 45, of the Latin, our author proceeds to Bengal in India, which had not been subjected to the Chan when Marco was at his court. Next is the province of Aniu subject to the Chan; whence a journey of eight days leads to that of Toloman. By the city of Similgu you pass the province of Cuigui; whence at the distance of four days is the city of Cancasu in Cathay. Seventeen days beyond the large city of Singuimatu is a large river, which comes from the land of Prester John, which is called Caramoran, being a mile in breadth, and so deep as to be navigable by large ships laden with merchandise. On this river the great Chan had fifteen vessels to conduct his people to the islands in the ocean, at the distance of a day's journey from which are two cities on the river, Coigangu and Caicui. On passing this river you enter the region of Mangi. It would be unnecessary to follow the steps of our traveller in this direction. Suffice it to observe from ch. 104 (lat. ii. 57.) that Marco Polo ruled the city of Nangui three years, by command of the great Chan, it having been taken by the industry of the three Venetian travellers, who constructed three manganels, or machines for throwing large stones, to the great terror of the inhabitants. At Singui Marco saw five thousand vessels, the river being a thoroughfare for sixteen provinces, and presenting on its banks two hundred cities. As the wonderful population of China could not be conceived in Europe, at the time of Marco Polo, it is no wonder that the usual malignity of ignorance called him Marco Millioni, or Marco of the Millions, his numbers appearing to be so much exaggerated; but the vague translation of the foolish monk also contributed, for in this very passage he says that each of the sixteen provinces had five thousand ships, which is wholly foreign to the sense of the original. It is needless to observe his endless perversion of the names, which renders it impossible to give any general interpretation of this celebrated journey, except from the Venetian original. Another noted passage shall now be selected from ch. 109, 110; in Latin lib. ii. cap. 64.

Quinsay, &c.] When you leave Singui you proceed for five days' journey, always finding many cities and castles; and then appears the noble city of Guinsai, the largest and grandest in the world. I Marco was in this city; and if you inquire concerning it, the circumference is one hundred measured miles; the bridges of stone being twelve thousand, so high that a large ship might pass underneath. (Marco Millioni!) These bridges are so numerous because the city stands wholly in the water, like Venice. In this city, by an useful ordinance, every one must follow the trade of his father and ancestors. In this city is a lake about thirty miles in circuit †; and around this lake are the most beautiful palaces in the world. In the midst are also two handsome palaces; and all those who make weddings go to these palaces,

* In the Latin Arcladam, and the city Unchian. † This greatly diminishes the wonder of its extent.

where

where they find all things necessary for the festival. There are also several little isles in different parts of this city. Throughout this country the Tatar money *de morari* is used *. The people adore idols; and have a peculiar speech. At each of the twelve thousand bridges are ten guards, to prevent injury to individuals, or any insurrection. In the city there is a large hill, on which is a high tower, and on the tower a large table, which is struck by way of alarm in cases of fire or other causes. All the streets are paved; and the great Chan pays particular attention to its police. There are in this city fourteen thousand baths; and the men and women are extremely amorous. At the distance of fifteen miles from Guinsai, towards the ocean, between the N.E. and E. is a city called Gansu, where there is a good haven, and many ships arrive from India, there being a considerable river which passes through many countries. The province of Mangi is divided by the great Chan into eight kingdoms or governments. In this city (Guinsai) there is always a king, who rules a hundred and forty cities. It is affirmed for a certainty that in the region of Mangi there are twelve hundred districts, all garrisoned by the great Chan; and still in order that there may be no rebellion, when a child is born in the region of Mangi, the day and hour are written to know the planet; and on a journey advice is asked of the astrologers, whose counsel is followed. When any one dies in this country the relations clothe themselves in canvass or coarse linen; and burn the bodies with horses and money as was described before. In this city is the palace of Scrifogi, who was sovereign of all the region of Mangi, and which is thus constructed. The first wall is about ten miles in circuit, very high and strong, there being within handsome gardens, with fair fruits, and fountains, and a lake replenished with excellent fish. In the midst is a beautiful palace with twenty halls of such extent, that ten thousand guests might be received at a festival †. Hence you may comprehend the magnitude of this city. Here is also a church of Nestorians ‡. In this city it is ordered that on every door be written the name of the master, his wives, children and domestics. And if any inhabitant pass elsewhere, he must take his name with him; he who rents the house being obliged to place his. All the inn-holders are ordered to give in writing the names of their guests, the month and day of their arrival, how long they have remained, and with how many horses §. In speaking of the city of Guinsai I may briefly mention the revenue of the great Chan. From all the province of Guinsai there arises a free revenue on salt alone of nine thousand tomans of gold, each toman being nine thousand sazi, and each sazo is worth more than seven ducats. From other objects besides the salt there are raised twenty thousand tomans of gold ‖."

India, &c.] It is unnecessary to dwell on the other cities of China, which are now so well known. The short portion which remains of Marco's interesting production is dedicated to the description of India, and the farthest regions of the east; occupying the third book of the Latin, which begins with ch. 119 of the original. The description of Japan must not be omitted, not only as a conclusive specimen of the Venetian copy, but as it was the first that disclosed that interesting country to European knowledge, and so much excited the attention of Colon, that he eagerly enquired for Zipango, when he arrived in the West Indies.

Having mentioned the city and haven of Jaitoni, possessing one of the best harbours in the world, and carrying on a prodigious trade with India, " so that for every ship

* Paper currency, made of the mulberry paper tree.

† The Latin of the injudicious monk bears that each would receive ten thousand.

‡ The public worship of the followers of Dalai Lama has impressed all travellers to Tibet with a great resemblance of the Christian. Hence perhaps Polo finds so many Nestorians in the east.

§ The monk has transposed the horses to the door of each house!

‖ The passage is difficult, and yet more confused in the Latin.

that

that arrives in Alexandria there arrive here one hundred*," and the enormous duties exacted, he thus proceeds.

JAPAN.] " But I will now be silent concerning these countries, and proceed to speak of India, in which I Marco remained for a long time, adding at the same time the wonderful things of this globe. I will first begin with the island of Cimpagu, which is in the ocean towards the east, distant about fifteen hundred miles from the continent; being a large land, inhabited by well made and handsome people, who adore idols. They have a king who pays tribute to no other; and speak a peculiar language. Here is found abundance of gold, but it is not permitted to be carried out of the island, whence few ships and little merchandise arrive there. The sovereign of the country has a palace of wonderful magnificence, being all covered with thick plates of fine gold, and the frames of the windows are of the same metal. This island also abounds with precious stones and vast riches. The great Chan learning the opulence of this island sent two of his barons to conquer it with a prodigious number of ships, laden with cavalry and infantry, and an abundant supply of provisions. One of these generals was called Abatan, and the other Vonsaincini. They left the port of Caicon and Gunsai, and proceeded to Cimpagu where they landed and ravaged the plains: but envy and jealousy arising between the two leaders, so that what the one wished the other opposed, they took no city, and only one castle, of which the garrison, which would not yield, was cut to pieces, except eight men, who could not be hurt with steel, because each had a precious stone of enchantment fixed in his arm, between the skin and the flesh. This being reported to the generals they were killed with clubs of wood; and the precious stones brought to these officers. One day it happened that a violent northerly wind arose, so that from fear that the fleet should be wrecked, all returned to the ships, and sailed to an island at the distance of about ten miles. But the wind became so tempestuous that many of the ships were wrecked, and the men escaped to land; while the other ships returned home. Those who had escaped to the land were about thirty thousand, who were all supposed to be lost. When the sea had become calm, the king of the island went with many ships to seize these invaders; but having landed with all his people, the Tatars made an unexpected turn, and seized the ships of the king, who was left in the island with his people. Proceeding to Cimpagu the Tatars landed, displaying the royal banners they had found in the ships; and approaching a city the gates were immediately opened. The Tatars entering sacked the whole, and even the women were served as at Verona. Immediately the king armed ships, and raised a new army to besiege the city. The Tatars receiving no succour, after a defence of seven months yielded on terms. This happened in the year 1269.

" In this island are idols, some with the head of a wolf, others of a hog, a ram, or a dog. Some have one head with four faces; others three heads on one neck; others the head under the shoulders; or one upon another; some having four arms and others ten. That idol is reputed the handsomest which has the most arms: and if asked why they make these idols in such distorted and different forms, their answer is, the custom was handed down by their ancestors. When these islanders capture any man or woman, who is not of their nation, if they have not money to ransom themselves, they are slain, their blood is drank, and the body afterwards eaten†. This island

* It would seriously appear that the translator neither understood Italian, nor the Venetian dialect. He has absurdly interpreted this clear passage, so as to imply that all the pepper and spices, which Alexandria sent to Christendom, were brought from this Chinese city to Alexandria: *nam piper et aromata quæ Alexandria ad partes mittit Christianorum, hæc ab illo emporio Alexandriam deseruntur.*

† The Arabian travellers in the ninth century inform us that human flesh was sold in the markets of China. These shocking customs were however quite extraordinary, and not diurnal, as in Africa. As no

island, as already mentioned, is in the great ocean. And, according to the report of skilful pilots and mariners, who frequent these seas, there are seven thousand four hundred and forty-seven isles, of which the greater number are inhabited. And in all these islands there is no tree which is not odoriferous, does not bear fruit, or is not useful in other respects. There is also produced abundance of white pepper: and a year is required to sail from the province of Mangi, the reason being that there reign two continual winds, the one during the winter, the other during the summer." Such is the original of this famous chapter, of which the sense has often been confounded and perverted by the Latin translator. He places, for example, the seven thousand four hundred and forty-seven islands *around Zipangu*, while our intelligent author, on the contrary, is speaking of the prodigious number of islands in the Indian ocean, and the northern part of the Pacific, which might not perhaps fall even short of the number he mentions, the Maldives alone having been computed at twelve hundred by ancient geographers. This passage is said wonderfully to have impressed Colon with the possibility, and great advantages, of reaching India from the west of Europe. For though that great man certainly did not use the ridiculous and mutilated Latin translation, followed long after by Ramusio, who rather wished to make an elegant work than to study the superior charms of veracity, yet even in the original narrative the expression being somewhat lax, might induce Colon to believe that many of these islands, abounding with the spices and precious woods of the east, stretched to a considerable extent towards Europe; as the false longitudes of Ptolemy, which left only a void of one third of the sphere, would naturally authorise him to conclude. These reasons have been indicated in the account of his life by his son Fernando *: and it is not improbable that Colon conceived that the imaginary isles of Antilla and St. Brandan, laid down in the maps of 1430 as lying opposite to Europe at no great distance, might belong to the numerous islands mentioned by Marco Polo.

Our author next proceeds to mention that on leaving Zaitoi, a port belonging to the great Chan, and sailing towards the W. and S. W. there is a country called Ciariban, in vain attempted to be conquered in 1249; but, on submission, a tribute was exacted of twelve elephants every year. "I Marco was in this country in 1275." There are many elephants, with wood of aloes, and thick forests of black ebony. In the next chapter this country seems more justly called Ciambam; and is supposed to be Siampa to the south of Cambodia, in a S. W. direction from China. Leaving this country, and sailing between the S. and S. E. for fourteen hundred miles, a great island is found called Lava, three thousand miles in circumference. This description can only apply to Borneo; and it is not a little remarkable that the chief kingdom and city of Borneo are called Lava to this day †: the Latin Java is therefore a mere corruption.

Leaving Lava, and sailing eighteen miles between S. and S. W. according to the Italian, but seven hundred according to the Latin, (the numbers being in both extremely corrupt, the most common fault in manuscripts,) there occur two islands, one called Sondur and the other Condur: and about two hundred miles beyond is the province or island of Lochach, which abounds in gold and ivory, but is little frequented, being remote from the common route. On leaving Lochach, and sailing five miles

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no trace of them can be found among the ancient Egyptians, Phenicians, Persians, and Hindoos, they evince beyond all reply that civilization did not originate in the eastern parts of Asia, but in the central: for though the reports may be false, there being still no similar reports concerning the ancient civilized nations, the estimate must remain nearly the same.

* Cap. vi, vii.

† See Valentyn's large map and description, vol. iv. p. 236.

to the S. but by the Latin five hundred, so that the direction and not the distances must guide the research, there is an isle called Pentara, amidst such shallow water, that it does not exceed four paces in depth. Proceeding five miles by the Italian to the S. there is a kingdom called Malonir, the city and island being called Pepetam, where there is abundance of spices*. Leaving Pepetam and proceeding one hundred miles to the S. is found the island of Java Mener, about two thousand miles in circuit. In a kingdom of this isle called Ferlach they use much Saracenic or Arabian merchandise; and the inhabitants of the low lands are Mahometans. From Ferlach he proceeds to Basma, and Samara†, both in the same island of Java Mener, where Marco Polo remained ten months. The polar star is not visible, nor that *Del Maistro*. The natives use palm wine. Another kingdom is Deragola: Lambri forms the fifth, and Fanfur the sixth kingdom of Java. I have in vain consulted the large map of Java in many sheets published by Valentyn, but can find no indication of the names mentioned by Polo; nor even in that of Sumatra, though by many supposed to be the Java Mener.

Leaving Lambri, and proceeding a hundred and forty miles to the north, two islands appear, Necunera and Namgama. They produce red sandal wood; and the inhabitants are cruel anthropophagi. From Namgama a course of one thousand miles to the S. W. conducts to Silan, which is clearly Ceylon. From this resting place a retrospect may therefore be made. Necunera seems to be Nicobar, while Namgama is Andaman; as by both the Latin and Italian Necunera is a hundred and forty or a hundred and fifty miles from Java Mener, it seems evident that this is Sumatra; and the consumpt of Arabian articles, and introduction of the Mahometan religion, indicate that most westerly of the Indian isles. As this isle is a hundred miles to the S. E. of Pepetam and Malonir, he must have sailed from the western coast of Malacca, and proceeded in that direction to Sumatra; and by not an uncommon mistake of the copyist it is probable that for Petan we should read Peran or Peirah, though the Pentam of some manuscripts may be Pendaon. But Malonir lies due south of Pentara and Lochach which seem to be described as S. S. W. of Lava or Borneo. As the numbers in the Italian are sometimes palpably corrupt, it is probable that the MS. used by the Latin translator, being perhaps more ancient, was in some instances more correct. If we read with the Latin, that from Lava or Borneo there are seven hundred miles to the islands of Sondur and Condur, without any direction being indicated, we shall judge that Polo returns from Lava towards Siampa, whence he commenced his voyage, near which we find the island of Condur, at the distance of about seven hundred miles from Borneo. It is from these isles that the courses must be taken to Lochach: but this is not the place to clear these difficulties.

HINDOSTAN, &c.] On proceeding forty miles to the west of Ceylon, the author at length arrives in the vast country of Hindostan; and in the original begins his description with the grand province of Nachabar, which he says is justly called India Major, as being in the Terra Firma ‡. The king of Vor is one of the princes of Nachabar, and has the tenth part of the numerous pearls which are found in a neighbouring gulf from April to May. Polo describes some of the customs of the Hindoos, particularly that of the women burning themselves with their dead husbands. The king of Vor purchases yearly about ten thousand horses in the country of Cormos formerly mentioned, each horse costing five sazi of gold §. They were chiefly supplied by the merchants of Guinsai, Sufur, and Eden. This nation descends from those who slew

* Perhaps Malacca and Patan. † This perhaps gave the name of Samatra or Sumatra.

‡ The account of Polo's Travels given by Dr. Robertson, (Disq. on India, p. 132, 133, and Notes p. 342,) is so wholly erroneous, that he appears never to have seen the book.

§ One Latin translator has put five hundred sazi of silver.

St.

St. Thomas, hence none of them dare to enter his church. The heat is intolerable; the rainy season is in June, July, and August. These hints from the description of Nachabar, which is transposed in the Latin edition, indicate that he begins with the coast of Coromandle fronting Ceylon. In the following chapter, 131, he says that when you have left Moabar, and proceeded a thousand miles to the north, you find a great kingdom called Muis (in the Latin Murfili) which abounds in diamonds. The body of St. Thomas is in the province of Moabar, reverenced both by Christians and Saracens; and he adds a miracle dated 1297. It is well known that the shrine of St. Thomas is near Madras on the coast of Coromandel, so that the Moabar of Marco Polo cannot imply Malabar, if his memory have not much deceived him; and as the two brothers and the son were concerned in this valuable labour, it is not probable that the mistake should have escaped them all. The other provinces of Hindostan described by our author are Lahe to the west of the shrine of St. Thomas; Orbai to the S. W. from Moabar, another proof that Malabar is not implied. In Comati the polar star is discoverable, but not visible from the island of Java to this country; whence if you proceed by sea for thirty miles you perceive the polar star, in appearance seven paces above the waves. Three hundred miles to the W. of Comati is the kingdom of Eli. Melibar is a great kingdom of India toward the W. wholly independent. This kingdom, and that of Gesurach, perhaps Geriah, swarmed with pirates, as common in ancient as modern times. Proceeding from Gesurach by sea towards the W. you find the kingdoms of Toma and Sebelech. "Know that I have only told you of the provinces which are upon the sea, and have said nothing of those inland, which would require a very long description."

AFRICA, &c.] Marco Polo afterwards proceeds to describe a portion of Africa, his intelligence concerning which he must have derived from the merchants whom he met in his travels; and which he vaguely and indistinctly includes among the distant countries of India, as he did not study geography but merely repeated what he had seen and heard. His island of Scorsia or Scoria, from which Madagascar is distant about a thousand miles, seems to be the island of Socotra; the real distance being about twenty-five degrees or fifteen hundred g. miles. It is probable that at this time Socotra was subject to Abyssinia, as he says the inhabitants were Christians, with an archbishop: but he does not mention aloes the peculiar product of that isle. Mandeigascar or Madagascar first appears on the scene of European knowledge. He says that this isle is four thousand miles in circumference, abundant in ivory, and red sandal wood. The tusk of a wild boar, more probably of the hippotamus which resembles the boar in its habits, was brought to the great chan, and weighed seventeen pounds. He also ascribes to Madagascar the *ruki*, fabulous large birds of the orientals. Then passing to the continent of Africa, he describes Zangibar, which he supposes to be an island one thousand miles in circumference. Thence he proceeds to Abasaia, Habasch, or Abyssinia, which is also, in his geography, a country of India. He rightly describes the inhabitants as Christians; and says that the country was divided into six kingdoms, three Christian and three Saracen, who acknowledged one supreme monarch. The wars with the sultan of Aden and Nerbia, perhaps Nubia, are stated; and he mentions that the king of Abyssinia, in 1287, obtained a great victory over the sultan of Aden, which province is briefly described, and where St. Thomas is said to have converted several people before he went to the country of Mochabar in India, where he was martyred; this Mochabar being the Moabar of a former passage.

SIBERIA, &c.] Quitting Africa he then turns his view towards the north of Asia. He gives a faint idea of Siberia, where the Mongols had established a kingdom; of the ermines, and other products; and even of the sledges drawn by dogs which are used in the eastern part. Beyond he justly says that all is ice in the winter, and all is mud

in the summer: but he idly derives the name of a country Scuricha from the continual obscurity. Adjacent to this country is the wide region of Rossia or Russia, then partly subject to the Tatars; with a short account of which Marco Polo closes his work, which is truly wonderful for that period.

From these details, which the curiosity and importance of the subject authorize, the reader will perceive what prodigious accessions to the knowledge of Asia arose from the travels of Marco Polo; whose discoveries may be said even to have exceeded those of Colon himself. While the ancients, as already mentioned, scarcely knew above one third of Asia, there are few regions of any consequence, which have escaped the researches of this great traveller. It seems singular that there should be no mention of the Moluccas or Spice Islands, whence the clove, nutmeg, and mace, must have been brought to Asia; and which were certainly included in the range of Chinese and oriental commerce. Exclusive of these, and of the Philippines, few important isles in the Indian Ocean have escaped the notice of Polo, whose manuscript probably first appeared about the year 1300, but being wrapt in the Venetian dialect long escaped the notice of the learned, so that the intelligent pope Pius II., who wrote a description of Asia about 1450, did not know its existence*. From the north of Siberia to

* Baretti in his Italian Library p. iv. London 1757, 8vo. from the Notes of Zeno, on Fontanini's *Biblioteca*, informs us that the travels of Marco Polo were dictated by him to one Rustigielo of Pisa, in the year 1299, in the prisons of Genoa, where that great traveller was then confined. Baretti has given a specimen which at the same time that it shews that the edition of Trevigi (unknown to him) is from a genuine original manuscript, also supplies the greater part of the introduction which is wanting in that edition; so that the short ch. 2, of the Latin alone remains unpublished. It is to be regretted that a splendid edition is not given from the original manuscripts, with illustrations. That they may be more easily discovered: the beginning is

Qui comenza il prologo del libro chiamado, de la istinzione del mondo.
Vui signori, imperadori, duchi, &c.

The decisive passage concerning the imprisonment of Polo is as follows; *Et dicho chel dito Missier Marcho Polo stete in queste diverse parte et pro vinzie vintisie ani; et questo per poter saver queste tal chosse: le qual siando destegnudo in charzere da Zenovessi, tute ste chosse feze schriver per misier Rustigielo, citadin de Pixa, lo qual era ne la dicta prixone con el dito misier March Polo: et fo schrito le dite chosse nel ano del nostro Signor JesuChristo mille duxento e nonanta nuove.*

In all probability this captivity arose from the noted defeat of the Venetian fleet commanded by Dandolo, on the 8th September 1298, in which the victorious Genoese took eighty-five ships, and seven thousand four hundred prisoners, among whom were the admiral, and many distinguished Venetians. Peace was re-established, and the prisoners restored, towards the end of the year 1299. Baretti has observed that copies of this manuscript, though written in the Venetian dialect, multiplied with great rapidity in all parts of Italy, and even in France and Germany; and that, if the Venetians could have boasted several writers like Polo, their dialect would probably have passed through all Italy, an honour reserved for the Florentine or Tuscan

The dialect of Pisa, of which Baretti gives a specimen, is very different from that of Venice; and Rustigielo had probably been long in the service of Venice, and taken prisoner with Marco Polo. Baretti also mentions, p. 233, an edition of Polo Ven. 1597, 8vo.; and adds that some suppose that Polo acquired the name of *Millioni*, because his family were said to have gained a million of ducats in the east. His travels were long regarded as fables beneath the notice of the learned; and it was not till after the discoveries of the Portuguese, that they obtained due credit. Zeno first demonstrated that these travels were written in the Venetian dialect, from the MS. above mentioned, preserved in the family of Soranzo at Venice. The first edition in the Venetian dialect, though somewhat modernized like the others, is supposed to be that of Venice, 1496, 8vo. The academicians Della Crusca used a Tuscan translation, of the beginning of the fourteenth century, by Ormanni. Pepuri, the Latin translator, was of Bologna, and seems not to have understood the Venetian. Ramusio must have been a most careless and indolent editor, as he supposed the work was first written in Latin; and was an utter stranger to all the circumstances though writing at Venice!

Though Polo assures us that he was at Cambalu or Pekin, he says nothing of the great wall; whence some have argued that it was built after China was delivered from the Mongol conquerors. The romantic Prevost, editor of the *Hist. Gen. des Voy.* hence asserts that Polo never was in China; though he informs us himself that he had been for three years governor of one of the principal cities! At what period Pipino

(or

to the Indian Ocean, from Constantinople to Japan, few objects of consequence have escaped the eye of our inquisitive traveller, to whose memory justice at length begins to be rendered.

HAITHO.] Haitho king or prince of Armenia, having abdicated the crown or his pretensions, and become a monk, retired to France, where he composed his Oriental History about the year 1307. This work presents a geographical description of Asia, which is not without its merit. Cathay he represents as the most populous and powerful empire in the world, inhabited by a people who asserted that they alone had two eyes, and the Europeans one; while all other nations were blind. The dominions of the Yugurs, Turkestan, Kharism, are also described; nor are Tangut and Tibet forgotten *.

S. ODORIC, 1317 — 1330.] While the careless Venetians have published no standard edition of Polo, whose name confers the most lasting honour on their country not to mention that he may be regarded as the father of their written language, a splendid edition appeared in 1761 of the far inferior work of Odorico; perhaps, because he has the honour of being a reputed saint, while Polo was merely a great and sensible sinner †. This friar, Odorico, is known in Latin by the name of *Odericus Utinensis*, being a native of Pordenone in the diocese of Udine. Embarking in a Venetian vessel, he arrived at Trebezond in 1317, whence he proceeded to the Greater Armenia, the cities Tauris and Soldania. After other courses he arrived at Tana in 1322; and afterwards sailed to Maabar, now called the coast of Coromandel; thence to Lamori, and the isles of Java and Paten, and Zapa. Thence to Silan and Dandin, whence he proceeded to Mangi or the southern part of China, where it appears that the minorites had already some establishments; and Odorico is said to have remained three years in Cambalu or Pekin, reverenced by the Chinese as a travelling Bramin. Leaving Cathay, he returned by the provinces of Prester-John, and the wide country of Tangut, where were also several minorites. Thence he probably passed by Persia, and arrived in Italy 1330, after an absence of thirteen years. He died with the reputation of sanctity, and of having wrought some miracles, in 1331, aged only forty-six; but does not appear to have been canonized till 1753. To this canonization we are particularly obliged for the edition of his travels, which seems to be accurately published from ancient manuscripts preserved in the convent of Udine, and elsewhere. But a translation had been published by Ramusio in his very inaccurate and mutilated collection; and some

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(or Pepuri) the ignorant monk, wrote his Latin translation is not specified, perhaps about the end of the fifteenth century, till which time the travels of Polo seem to have been little known, being in a dialect seldom studied. Muller mentions a remarkable translation by a courtier attendant on the queen of Portugal, wife of Emanuel, but in whose name he seems to err, for that king did not marry Eleonora of Austria till 1519. The queen must therefore be Mary of Castelle, whom he married in 1500. However this be, in 1502, there was published at Lisbon, a Portuguese translation of the Travels of Marco Polo, with those of Nicolo Conti, also called Nicolo of Venice, who about 1440 returned from his travels of twenty five years in the east, and an account of which was written from his own mouth in Latin by the celebrated Poggius; so that this work which was supposed to be lost may probably be found among the works of Poggius, but with certainty in the Portuguese edition. The third production in this volume is an epistle from Jerome de S. Stephano, a Genoese, written from Tripoli in Syria in 1499 to a friend in Germany. This remarkable edition of Polo was published for the use of the new discoveries, the Colons and the Gamas.

* He sometimes illustrates Polo. Mozul is Mesopotamia; Turcomania extended on the W. to the city of Natalia on the Greek Sea

† Elogio Storico alle Gesta del Beato Odorico dell' Ordine de' Minori Conventuali: con *la Storia, da lui Dettata, de' suoi Viaggi Asiatici; illustrata da un Religioso dell' Ordine Stesso*, e presentata agli Amatori delle Antichita. Venice, 1761, large 4to. with three plates, but the map is useless.

fragments of the Latin are given by the Bollandists. Such are, however, the merits of Odorico, that, as every trade has its saint, he might be chosen as the patron saint of geographers.

INDIA.] Independently of its curiosity, the work of Odorico forms, in many passages, an excellent commentary on that of Marco Polo, in which view only his steps shall be briefly traced. The account of Trebezond corresponds with that of Marco Polo. Arziron in the Greater Armenia and Tauris follow. Soldania was the summer residence of the Persian kings. Odorico travels with a *caravan* towards upper India, and arrives at the city of Gest or Yesd; thence, unaccountably, he passes to the town of Job, and tower of Babel. Leaving *this India*, he arrives at Ormes or Ornes, where he makes a wonderful observation for a monk and a saint; thence in twenty eight days he sails to Tana, where four minorites had been martyred, and where it was reported that king Porus had resided. From the notes it would seem to be near Surat, but is perhaps Tata on the Indus. He then describes the empire of Minebar which produces pepper. This the innotator interprets to be Malabar; while the long account of Mobar in the next chapter indicates Coromandel. He then goes to Lamori towards the south, perhaps the Lambri of Polo. Odorico here loses sight of the polar star, and finds such heat that the people are wholly naked; they eat human flesh, and the women are all common. In the same island, to the south, is a kingdom called Sumoltra, interpreted Sumatra, and another kingdom Botonigo. Next is the great island of Java, which the editor supposes to be modern Java. A kingdom here is called Panten or Malamusin, probably the kingdom of Patan in Malacca. The mode of making sago is clearly indicated, as in Polo. Zampa is next described, which the careless editor supposes to be Zipango, while it is Siampa. The isle of Nicuveran follows, where our saint finds a people with the heads of dogs. Silam is Ceylon; whence proceeding to the south, he reaches a great island called Dondin or Dandin, where the people are anthropophagi; but no such name or position occurs in these seas, and the saint seems not averse to fiction. Mangi, he says, was called Superior India. The Chinese mode of fishing with pelicans is described. The description of Guinsai, here called Cansai, is literally taken from Marco Polo, the hundred miles in circuit, the twelve thousand bridges, &c. Of Cambalec, the description may be compared with that of Polo, from whom our author has again largely borrowed. Critics have already remarked the same feature in the travels of Sir John Mandeville, in which whole chapters are taken from Polo; as it often happens that an original writer is robbed, and afterwards reviled. An edition of the travels of Marco Polo might present in the notes the few additions to be found in the travels of Odoric and of Mandeville; for the knight or his transcribers are also shameful plagiarists, the obscurity of the Venetian dialect having long thrown a veil over the fraud. Perhaps it would not even be rash to infer that Odorico, who died soon after his return, never wrote any account of his travels, but that the whole is a fabrication by some copyist, who knew that his reputation of a saint, and the fame of his long residence in the east, would procure a speedy sale for the manuscripts. The simplicity of the style and manner, the frequency of personal adventures, and innumerable other circumstances, affix the stamp of authenticity on the narrative of Polo; while those of Odoric and Mandeville seem only miserable copies and extracts, and abound with numerous fables beneath the gravity of the great Venetian traveller.

The kingdom of Tibot or Tibet is also described, or rather one or two singular customs; and our author again returns to Mangi: thence he proceeds to the land of the Assassins, where the minorites wrought a miracle: and this whole work, which occupies more than thirty pages in quarto, does little credit either to the veracity or observation of the friar: and might, perhaps, even be classed among the pious frauds, from

from the repeated miracles ascribed to his order, and from the large plagiarisms extracted from Polo.

MANDEVILLE.] Mandeville is said to have proceeded on his journey in 1322, and to have returned in 1355, having travelled over great part of Asia, and served in the army of the sultan of Egypt, and in that of the great chan. He is buried at Liege, where he died on the 17th November 1371. The best edition of his travels was published at London 1725, 8vo. in the old English dialect, the other copies being said to be extracts; but if the plagiarisms from Polo be there omitted, they are rather to be considered as the most genuine narratives.

The travels of Sir John Mandeville have been more celebrated than read, though it would have been pleasing to have found an English writer assuming his share in the great discoveries in Asia. A brief account of his work will enable the reader to judge of his pretensions *.

Sir John Mandeville informs us that he was born at St. Albans in England; and having a desire to travel, passed the sea in the year 1322, or, according to other manuscripts, 1332, and visited, among other countries, India, and the Indian isles; but it is remarkable that he here says nothing of Cathay, though, if he had visited that country, it was precisely the most striking object. He then indicates various routes to Constantinople; and in this, as in other parts, there are more marks of compilation than of originality, the personal adventures, and many other circumstances, which impress veracity on the page of Marco Polo, being here totally wanting. Concerning the cross and crown of Jesus Christ at Constantinople, there are long fables, which his contemporary, Chaucer, would have turned into ridicule, and affirmed them to be 'dreems of ouden wemen.' Similar fables, disgraceful to any writer of common sense, stain every page of Mandeville. He afterwards proceeds to the Holy Land, which he seems to have really visited; and a description of which, replete with monkish tales, occupies one half of his book. Our author says that he served the sultan of Egypt against the Beduins or wild Arabs; yet seems an entire stranger to that country, there been only a slight mention of Cairo, while the account is filled with pedantic confusion concerning Babylon in Egypt, which he confounds with Babylon in Chaldea. The sultan is represented as residing at Babylon; and there is nothing in the whole description which might not have been drawn from books common at the time. Though Mandeville appear to have taken many wild descriptions from Pliny, yet he is such a stranger to ancient lore, as gravely to inform us, that roses were first seen when an innocent virgin, condemned to death, addressed her prayers to Jesus Christ. It is unnecessary to pursue the description of the Holy Land given by our weak author, in the most injudicious and credulous manner, so that sometimes his singular ignorance approaches to blasphemy.

In his twelfth chapter, or about the middle of his book, Mandeville gives some account of the manners of the Saracens, or rather of their ideas concerning Christ; and afterwards falls into a roaming description of various countries, bearing the usual indelible stamp of the compiler, and not of the original traveller, for most of the names and ideas belong to ancient geography, as Mesopotamia, Chaldea, Scythia, Albania, Hircania, Bactria, Iberia, &c. &c. all totally unknown to Marco Polo, who only presents, as a real traveller, the modern names and divisions, having been fortunately unacquainted with ancient geography. Where any thing modern appears, it is some childish fable. Noah's ark is by his account still visible on Ararat. The land of Job

* The edition used is the English, London, 1725, 8vo., published from a MS. in the Cotton Library, by Mr. le Neve. He says himself that he wrote the work in Latin; whence he translated it into French and English,

seems to have been borrowed from Odoric; and our veracious knight has fairly taken from ancient writers the account of the Amazons, whom he represents as an existing nation. He then describes diamonds, and says, he has often found by experience that, if they be wet with May-dew, they will in the course of years, grow to a great size! We next find our author in India without any account of his journey *. He then proceeds to the isle of Lamary, the Lambri of Polo, and his mention of the star Transmontane, an idea and expression purely Italian, demonstrates the source of his information. The description of the other islands seems also to consist of disguised extracts from Polo, with ridiculous additions, such as, the shells of snails so large that many persons may lodge in them. The English editor has also shewn, that his account of the pretended varieties of the human race, as nations of hermaphrodites, &c. &c. which our skilful author places in separate isles in the Indian ocean, are mere transcripts from Pliny's natural history. The description of Mangi is most inaccurately borrowed from Polo, and disguised, as usually happens to stolen goods. The city with twelve thousand bridges has twelve principal gates, and before every gate extends for the length of three or four miles a detached town or great city! In short, a more weak or injudicious author, or rather plagiarist, never disgraced literature; and as he does not mention Cathay in his prologue, a description of that country appears, as already stated, to have been a posterior idea. Yet he gravely asserts, p. 263, that his companions and he, with their yeomen or attendants, served the emperor of Cathay fifteen months against the king of Mangi; while it is evident, from his relation, in which there is neither personal adventure, nor new route, nor even expression that indicates actual inspection, that he has merely added extravagant fables to the plain description of Marco Polo. Nor does he even know the name of the chan whom he served †, as he closes the succession with Kublai, who, by his account, was a Christian; a remark which, of itself, evinces that he never had visited the Mongol court; and instead of continuing the series to his own time, he only adds, "the next great chan who succeeded became a pagan, and all the others after him." The account of the Mongol court, of the paper money, &c. is borrowed from Polo; with the addition, that a hundred and fifty thousand men were occupied in feeding wild beasts and birds in the emperor's menagerie. In short, if Sir John Mandeville ever visited Cathay, he has added nothing to the information given by Polo; and if not, as seems more probable, his narrative deserves still less attention.

Leaving his description of Cathay, he returns to Tharse, a kingdom, by his account, on the western boundaries of Cathay, while on the west of Tharse is Turkestan! Thus our pretended great traveller knew nothing of the wide region of Tangut, which really adjoined to Cathay on the west. His account of Turkestan, &c. seems a mere transcript of Odoric. After this digression he returns to the isles beyond Cathay, in his idea; but again evinces that he never travelled in that direction, for these countries are unexpectedly on the Caspian sea. Prester-John is also with him only a designation of the emperor of India; which is a country divided into many islands by the great torrents descending from Paradise! There is also in this country a sea of gravel and sand without one drop of water, which, nevertheless, always moves in waves like the ocean! Prester-John dwells in the city of Susa (in Persia); the gates of his palace are of solid sardonyx, the bars of ivory, the windows of rock crystal, the tables of emerald, while carbuncles one foot in length enlighten the palace by night. These ridicu-

* Perhaps the following is the only new article of intelligence, p. 207. "In that Contree growen manye stronge Vynes: and the Women drynken Wyn, and men not: and the Women schaven hire Berdes, and the men not."

† He, however, in another passage, p. 299, says, that his chan was called Thiaut, and his eldest son Tossue, neither of which is exact.

lous tales, with others still more extravagant, our author probably heard in the Holy Land; for if he had visited the Mongol court, like Polo, his account of Prester-John would have been as modest and consistent as that of the great Venetian traveller; and his repeated scriptural names of rivers, as Phison, &c. indicate the source of his fables to have sprung from Christian pilgrims who visited Jerusalem. In his passage through the Valley of Death, he says, he was accompanied by two friars minor of Lombardy; and his account of apparitions, of precious stones, &c. is a mere transcript from Odoric: but Sir John has added, in his usual style, two great islands in the midst of the continent, one inhabited by giants thirty feet in height, while those of the other are from forty-five to fifty. In the work of Marco Polo there are two or three fables, arising from natural phenomena; but here there are a thousand fictions, so utterly ridiculous as to surpass the credulity of childhood. Our author proceeds to find many islands full of singular customs, borrowed from Pliny, and from the romances of the middle ages. As, in his account of Syria, Andromeda is not the name of the lady, but of the monster about to devour her, so in this learned account of India, there is an isle called Brahmin, and another called Gymnosophist, which was entered by Alexander the Great. Follows an isle called Pytan, in which the inhabitants live on the smell of wild apples, an idea borrowed from Pliny; and from the same author is also borrowed the account of the Indian ants, as large as cats, who guard caverns of gold. Near the land of Prester-John is Paradise; but our author is for once ingenuous, for he says *, "Of Paradise I cannot speak properly, because I was not there. It is far beyond, and that disheartened me; and, also, I was not worthy. But as I have heard say of wise men beyond, I shall tell you with good will. Terrestrial Paradise, as wise men say, is the highest place on earth that is in all the world, and it is so high that it toucheth near to the circle of the moon, where the moon taketh her turn. For it is so high that the flood of Noah might not come to it.—And this Paradise is inclosed all about with a wall; and men wit not whereof it is, for the walls be covered all over with moss, as it seemeth." Then, by his description, the four rivers proceeding from Paradise are, the Ganges, the Nile, the Tigris, and the Euphrates; an idea which no traveller in the east could have adopted. After having exhausted the fables of Pliny, our author has again recourse to Odoric and Marco Polo, distorting their relations as usual.

From this analysis it will evidently appear, that if Sir John Mandeville ever passed the boundaries of the Holy Land, he was so weak, ignorant, and credulous, that he has rather distorted the accounts of preceding travellers, than opened any new source of knowledge; and that he has not added one particle of solid information to the discoveries of Polo. But it rather appears that, having resided many years in the Holy Land, he had gathered materials for his book from the confused tales of Christian pilgrims, who crowded to that country from the east, as well as from the west, from the frontiers of Cathay, as well as from England. And, upon the whole, his work is so visionary and useless, that the complete oblivion into which it has fallen is most justly merited.

Before the return of Mandeville, an Italian author published a singular work, whence a curious extract has been given by Dr. Forster, though somewhat foreign to the design of his compilation †.

"Francisco Balducci Pegolotti, an Italian, wrote in the year 1335, a system of commercial geography, of great importance, considering the period in which it was written: the title is, *Di divisamenti di paesi, e di mesure, di mercatanzie, ed altre cose*

* P. 368.

† History of Voyages and Discoveries in the North, London, 1786, 4to. p. 150.

bisognevoli

bisognevoli di sapere a mercatanti, de diversi parti del mondo *. No historian has hitherto profited by this treatise. Professor Sprengel has been the first to make use of it in his 'Extent and Increase of Geographical Knowledge.' We shall therefore insert here a translation of that part of it which relates to our present undertaking, entire and without any abridgment; he calls it *Avisamento del viaggio del Gattajo per lo Cammino della Tana, ad audare e tornare con mercatanzia*, i. e. an indication of the route that may be taken with merchandise from Tana (or Azof), to Gattay, (Cathay, or North China) and from thence back again.

'In the first place, from Tana (or Azof) to Gintarchan [1] or (Astrakhan) it is twenty-five days' journey with waggons drawn by oxen; but with waggons drawn by horses it is only ten or twelve days' journey. On the road, one meets with a great number of armed Moccols (Mogols). From Gintarchan to Sara [2], by the river, it is but one day's sail; but from Sara to Saracanco [3], it is eight days' journey by water; one may, however, travel either by land or water, which ever is most agreeable; yet, with merchandise, it is cheapest to go by water. From Saracanco to Organci [4], it is twenty days' journey travelling with camels. Whoever travels with merchandise will do well to go to Organci, it being a convenient country for the expeditious sale of goods. And from Organci to Oltrarra [5], it is thirty-five or forty days' journey with camels. But in going from Saracanca straight on to Oltrarra, it takes up fifty days' journey; and if one has no merchandise, it is a better way than that by Organci. From Oltrarra to Armalecco [6], it is forty-five days' journey travelling with asses, and in the road one meets every day with Moccols (Mogols). From Armalecco to Camexu [7], it is seventy days' journey on asses, and from Camexu to a river called Kara Morin [8], it is fifty days' journey on horses. From this river the traveller may go to Cassai [9], to dispose of his loading of silver there; this being a very good country for the expe-

* This Commercial Geography has been reprinted entire in a book where one would hardly think of looking for it, viz. in the 3d volume of the work, intitled, *Della Decima e delle altre gravezze. Lisbona e lucca*, 1766, 4to. F.

[1] Gintarchan, or Zintarchan, is, by Josaphat Barbaro, also called Gitarchan; and Witsen says, in his Noord en Oost Tartarye, p. 709, *Astracan was van ouds genaemt Citracan*, i. e. Astrakhan was anciently called Citracan. By the Calmucks, it is called *Hadschi Aidar Khan Balgassun*, or the city of Hadschi Aidar Khan; whence all those names are derived of Zitarkhan, Shtrakhan, and Astrakhan. F.

[2] Sara is undoubtedly the town of Saray, so often spoken of above, and situated on the eastern arm of the Wolga or Achtuba. The Astrachan, mentioned by Balducci Pegolotti; was not on the same spot where that town stands now, but the ancient Astrachan was demolished together with Saray, by the emperor Timur, in the winter of 1396. The old town of Saray was pretty near the ancient Astrakhan. F.

[3] Saracanca is very probably the town formerly existing on the river Jaick, or Ural, the remains of which are still called Saratshik. F.

[4] It is easy to recognize Organci in the town of Urgenz, in Kheucaresm. This place is called likewise by Abul feda, Dischordschania, and, by the Persians, Korkang. But there were two towns of this name, viz. the Great and the Lesser Urgenz. The one was very near the place where the Gihun discharges itself into lake Aral, this was called Old Urgenz; another of this name, called New Urgenz, is to be found near Chiwa, on the Gihun. F.

[5] Oltrarre, is properly called Otrar, and also Farah, which latter name is to be found in so early a writer as Abulfeda. It is situated on the river Sihon, or Sirr. The Chinese, who cannot pronounce the letter *r*, call it Uotala. F.

[6] Armalecco is the name of a town called Almalig, which, according to Nassir Ettusi, and Ulughbegh, is in Turkestan. From Scherfeddin Ali, the author of the life of Timur, it appears, that this Almaleg is situated between the town of Taschkent and the river Irtisch, in the country of Geré, on the bank of the river Ab-Eile, which, at this very day, discharges itself into the Sihon, or Sirr-Daria. F.

[7] Camexu is probably nothing more than the name of Khame, or Khami, with the addition of *Xu*, instead of Tscheu, which, in the Chinese language, signifies a town. F.

[8] The river above mentioned is, doubtless, the Kara Morin, i. e. Kara Moran, but which the Chinese call Hoang-ho. F.

[9] Kassai seems to be the place called Kissen, on the northermost winding of Hoang-ho. F.

ditious

ditious sale of merchandise, and from Cassai he goes through the whole land of Gattay with the money he has received at Cassai for his silver; this money is paper only, called Babischi, four of which Babischies make a silver somno. From Cassai to Gamalecco [10], which is the capital of the land of Cattai, it is thirty days journey.'

" If the reader has any idea of the difficulty attendant on making out so many names of places disguised by a vicious orthography, a difficulty which is still more increased by the necessity there is for determining with accuracy the situation of these places, and their probable distance from each other, he will perhaps be ready to allow, that the task is certainly not very trifling, nor to be accomplished without much labour.

" Balducci Pegolotti certifies also the existence of the paper-money in China, previously mentioned by Ruysbroeck, Haitho, Marco Polo, and Oderic of Portenau, which some of the above authors describe as being made of cotton paper; others, on the contrary, remark very justly, that it is made of the bark of the mulberry-tree. Oderic of Portenau calls it Balis, Balducci Pegolotti, Balischi; Mandeville says that it is made of leather. A jesuit, named Gabriel de Magaillans, pretends, that Marco Polo was mistaken with regard to the paper-money; but it is pretty clear, by the testimonies of about six travellers, eye-witnesses to the fact, that such paper-money actually did exist in the times of the emperors of the Mogul race, or of the regal tribe of Yu, and then only, having been abolished afterwards."

Dr. Forster proceeds to mention the travels of a German, called Schildtberger, who being taken prisoner by the Turks in 1395, was again captured by Timur, whom he accompanied in some expeditions, and resided in Tatary some time after the death of that emperor. After an absence of thirty-two years he returned to Munich. Dr. Forster has given a brief account of his travels, which do not seem to have passed the bounds of Independent Tatary; but has omitted to mention where he found the work, probably printed in old German.

The fifteenth century opened with little promise, though it was to close with the grand discovery of the passage to Asia by the Cape of Good Hope. Nicolo Conti of Venice seems to have returned from the east about 1440, after a residence of twenty-five years. His travels, as already mentioned, were written in Latin from his own mouth by the celebrated Poggius; and a Portuguese translation appeared at Lisbon in 1502, at the end of one from Marco Polo. Conti is repeatedly quoted by Eneas Sylvius, afterwards pope Pius II., and by Ortelius who calls him Nicolaus de Comitibus and Nicolaus de Conti. His work is however of little consequence to the progress of geography.

The intention of this memoir is only to commemorate the chief epochs of Asiatic discovery; nor is it necessary to dwell on the travels of the ambassadors of the Shah Rokh the son of Timur, from Herat to Cathay, in 1419, published by Mirchond, and republished by Witsen in his curious Dutch work called *Nord en Oost Tartarye*; or on the journey of Barbaro the Venetian ambassador to Tana or Azof, then belonging to the Genoese, in 1436, that journey being chiefly curious from the early account of Russia. From this period till the discovery of the passage to India by the Cape of Good Hope, there appears to have been a pause, as if the attention of mankind had been diverted towards the progress of the Portuguese discoveries by sea; nor would it be easy to indicate travels of any consequence during the latter half of the fifteenth century. The art of printing, however, began gradually to impart more enlarged ideas, and the numerous editions of Ptolemy, shew the wide demand for the only scientific work then extant of general geography.

[10] Gamalecco is, without doubt, Cambaleg, or Pekin; in like manner as Gattay is put for Cathay. F.

The discovery of the Cape of Good Hope, the voyage of Gama, at length disclosed the shores of Asia to the exact indications of the compass, and the accuracy of modern knowledge. So rapid was the progress that about 1540 Japan had already been visited by European navigators; and the successive discoveries may be traced in the course of this volume.

As the southern nations of Europe had discovered an entrance to the opulent commerce of India by the south, so it was natural that the northern nations should inquire for such a passage in an opposite direction. In this pursuit the English and the Dutch eagerly engaged with spirited rivalship, being the most commercial nations in the north, after the fall of the Hanseatic League, which had been contented to diffuse along the Baltic the Indian articles sent from China. In 1497 Sebastian Cabot, by the command or permission of Henry VII., attempted to discover a passage to India by the north of America, in which he and many successors failed; but it was not ascertained till very lately that such a passage cannot exist, being utterly prohibited by the ice of the Arctic Ocean. During the despotic reign of Henry VIII. enterprize was mute: the attention of that monarch to his marine being directed, with his usual ostentation, to the construction of large ships of war; and he had besides married a Spanish princess, and was probably averse to interfere in the progress of Spanish discovery. The failure of Cabot, who had been created grand pilot of England, and whose maritime skill was greatly revered, probably contributed to direct the attention to another quarter, and excite a new pursuit, that of reaching India by the north of Europe and Asia. With this view Sir Hugh Willoughby proceeded with three ships in 1553. He perished with his crew at the mouth of the river Petchora, in Russian Lapland. Another ship, separated in a storm, returned to England; while the third commanded by Chancellor made a discovery, which in some degree compensated the failure of the main object; for entering the White Sea, and the mouth of the river Dvina, the English captain was surprised to hear that he was in the empire of Russia, subject to a powerful and opulent monarch, now delivered from the yoke of the Tatars, and ready to burst into the system of European policy. The period was critical and fortunate. Chancellor lost no time in proceeding to the court at Moscow. The czar was equally surprised and pleased at this unexpected arrival, and eagerly embraced offers of commerce, that of his country having been long shackled by the Hanseatic League. The boldness and novelty of the enterprise, the important discovery that commerce might be conducted by the Arctic Ocean, so as to open new sources of opulence and prosperity to his dominions, delighted the barbaric sovereign. The cargo was speedily sold; encouraging privileges granted; and the trade with Russia to the new town of Archangel, founded in consequence of this adventure, first began to open the views of England towards that extent of commerce which now encircles the globe.

This incident is however rather foreign to the objects of the present inquiry; and other attempts to discover a passage to India by the north of Asia, have proved equally fruitless, for the same causes which exclude all navigation on the north of America.

Though many important discoveries of the Spaniards and Portuguese were concealed by the commercial jealousy of these nations; yet geographers began to avail themselves of the new enterprises, and to enrich the work of Ptolemy, which still remained the sole standard of universal geography. By a singular fatality the very reputation of that author contributed to retard the progress of the science; for as the wide extent of his longitudes left room for even the new discoveries in Asia, they were by writers, merely scientific, adapted to his delineations; and scarcely was there a rational inquiry, or even a doubt concerning the extent of ancient knowledge

in the three continents, till D'Anville set the example, which has since been ably followed by Gossellin. The geography of Ptolemy, like the philosophy of Aristotle, was supposed to be infallible; and never was the chain of routine more intensely felt; successive geographers, for two or three centuries, blindly following the steps of their predecessors. Nay in Italy itself, where the light of modern science first arose, the work of Ptolemy was republished till the seventeenth century, only with the addition of some modern maps. The translation of Ruscelli, Venice 1574, 4to. is not without learning; and presents very neat engravings of ancient and modern maps, so as still to interest the historian of geography. That of Magini, also published at Venice, 1598, 2 vols. in folio, adds to the maps of Ptolemy thirty-seven modern delineations, engraved by the celebrated Porro, being intended as a complete system of the science.

NEW CHARTS.] Mean while navigators, finding little or no assistance from the maps of Ptolemy, were constrained to construct charts for their own safety, and that of their successors. It is evident, from many maps mentioned in the account of Australasia, that the Portuguese had explored nearly one half of the country, which has so absurdly been called New Holland, before the year 1540. But as they found neither spices, nor other objects which could interest them; and perhaps, because the parts discovered rather seemed to belong to the Spaniards, according to the papal line of demarcation; these researches, though known to the sovereigns and chief navigators of Europe, continued to escape the notice of the theoretic geographers, who published their lucubrations; and who, in the pedantic spirit of the times, would rather have explained or distorted a passage of some obscure ancient, than have recorded the discovery of a new continent, or contributed to the advancement of knowledge and enterprise. The deplorable bondage under the chains of Ptolemy, the subjection to the leaden sceptre and Saturnian reign of routine, cannot be better evidenced than by this striking instance, which will ever remain a proof of the want of research, and of common talents, among the profoundly learned and profoundly dull authors, who during two centuries usurped the name and authority of geographers; and whose works, by an equal routine, were received in all schools and universities, to the great injury of education and of real and practical science. Modern geography, which, being infinitely more exact and authentic, ought to be the first object of study, and followed by the ancient, which can only be justly estimated by recent and precise knowledge of the windings of the shores, courses of the rivers, directions and extent of the chains of mountains, was on the contrary postponed to the ancient, and interwoven by way of supplement: a plan which, joined with the miserable arrangement of the topics, rendered confusion more confused, and presented a chaos instead of a world. As one grand object of geography is to illustrate history, it may easily be perceived that the absurdity was precisely equal to that of interweaving the modern history of Italy with that of ancient Rome, or the history of Timur with that of Alexander the Great. While even a man of learning was often embarrassed by the inevitable obscurity arising from this confusion, it may be imagined what effect it had on the minds of youth, to which the most clear, precise, and luminous ideas should be presented; so that they left the schools and universities with a chaotic medley of ancient and modern notions, instead of just and clear conceptions of a science, calculated above all others to interest their minds, and open the temple of universal knowledge. When it is called to remembrance that so late as 1769, D'Anville, whose judgment, sagacity, and long experience of the subject, justly render his decisions of the greatest weight, was the first who completely burst this chain, and treated ancient geography apart, as a distinct branch; the heavy sway of prejudice, the extreme rarity of judgment and sagacity, and the slow progress of practical and legitimate

science, are lamentably perceivable. Will it be believed by an enlightened poste rity that there still remain some sciolists in his own country, who, to cover their own ignorance, attempt to revive the antiquated method of confounding ancient and modern geography, as by means of this artificial darkness their errors become less apparent?

Not only was Ptolemy blindly followed in Italy, but in other countries; as appears from the system of Ortelius 1570 *; and that of Cluverius, 1620, which continued to be reprinted till nearly the middle of the eighteenth century, as the sole modern classical system of geography. Cellarius, 1690, began to supersede the use of Cluverius in ancient geography; while little separate systems of the modern began to appear for the use of youth. But as no author of distinguished talents had arisen, to treat this important branch with the name and dignity of a science, it was merely regarded as a youthful pursuit; and no writer except D'Anville has been quoted by any historian of eminence. Such was the want of judgment and sagacity in these systems, that the great modern discoveries in Asia, far more important than those of America, were merged in the old maps of Agathodemon, and the ancient appellations of Ptolemy. The Sinæ were extended over all China and Japan; while the Seres occupied all Siberia; and some profound dunces even filled America with the Atlantes †! This wide confusion necessarily arose from the mixture of ancient and modern geography, while the former only includes one quarter of the habitable world; and it is a further argument against this mixture, that it can only be attempted with regard to that portion, so that there is a necessary discrepancy in any such system, as one quarter of it must be constructed upon one plan, and the three remaining quarters upon another.

Atlas of Blaeu.] Nevertheless the great Atlas of Blaeu, which began to be published about 1650, and that of Jansson, containing minute and even topographical maps of the various countries then known, are productions of surprising magnificence; and remain unrivalled monuments of the spirit of the publishers, and the opulence of a great commercial country. The exactness of the descriptions in the Latin, French, and Spanish languages, this expensive work being destined for universal sale, the splendour of the decorations, and even the beauty of the colours, which, by a process now apparently lost, retain their original freshness ‡, render this grand production one of the most singular monuments of literature. To this work the reader may be referred for the knowledge concerning Asia in the middle of the seventeenth century, which he will find extremely imperfect. Nor in tracing the progress of that knowledge, as more immediately and precisely derived from the accurate delineation of maps, which form the chief basis of geography strictly considered, must the Atlas of China, reduced from the operations of the jesuits, and superintended by D'Anville, be forgotten; the previous ideas being vague and inaccurate concerning that vast empire, which includes the third part of the human race, in the highest state of civilization, industry, and prosperity; being solely conducted by men of knowledge and experience, educated for that special purpose, and gradually promoted according to merit; while many states in less enlightened Europe have in all ages fallen, and will continue to fall, because knowledge and merit conferring no power, their affairs are often directed by

* The Cosmographia of Sebastian Munster, Basel, 1544, folio, cannot be called a system of geography. The translation by Belleforest, Paris, 1575, 2 vols. folio, is rather curious.

† Avril says in his travels, that even at the end of the seventeenth century, Asia was extended twenty-five degrees too much to the east.

‡ The modern colours have been found so perishable that at the *Depot de la Marine* only blue is permitted to be used.

female

female caprice, intrigues of courtiers, and the irremediable errors of passion and ignorance.

STRAHLENBERG.] Another eminent accession to the geography of Asia was the map of the central parts, published by Strahlenberg in 1737. That officer having been sent as a prisoner to Siberia, laudably occupied his leisure in drawing up an account of the surrounding countries, and a map, which gave the first precise ideas concerning the seats of those nations, whose invasions had repeatedly subjugated the eastern half of Europe. The wide extent of Siberia, the courses of the rivers Ob, Yenesei, and Lena, were introduced into geography; and the grand chain of the Uralian mountains first indicated as a natural boundary between Asia and Europe, at least this limit was firmly established, for in the maps to the edition of Cluverius, London, 1711, it is hinted, while in the map of Asia the most eastern part of Siberia is called *Scythia extra Imaum*, and the river Paropamisus occupies the place of the Lena; Tangut is at lat. 60°, and Mongulia 68°! Errors of twenty degrees or twelve hundred geographical miles! The map of Strahlenberg still remains a curious and valuable monument of the progress of discovery in Asia. The Caspian Sea is probably for the first time, in a general map, laid down in its true form as ascertained by Peter the Great, that is extending from N. to S. while in preceding maps Ptolemy had been followed, who gives the length from E. to W., and there are many other important improvements. But in the eastern extremities, though the Techuks be justly placed, Kamschatka is supposed to be the same with the Land of Jedso, and a large island occupies the place of America. Bering however soon after disclosed the strait which separates the two continents; and the discoveries of Cook and other late English navigators have thrown a steady light over the eastern extremities of Asia, for the Russians being unskilful in the observations of the longitudes, still a most difficult part of the science, they have often introduced confusion instead of precision. The unfortunate La Perouse examined the large island opposite to the mouth of the river Amur, which was found to be far more considerable than formerly laid down; and has lent his name to a strait between that island and the Land of Jesso. As the intention of this memoir is only to commemorate the chief epochs of discovery, the more minute being left for the accounts of the various countries, it is unnecessary to dwell on the improvements of the geography of Siberia or the northern half of Asia, in the maps published by the Russian government; on the Aleutic Isles; the recent rectifications of some positions in Japan and China; the improved geography of the Birman empire, and of various parts of Hindostan, a vast region in which even D'Anville was bewildered, and many gross errors remained till Rennell published his excellent map and memoir, which may justly be said to have laid the first foundations of geography as a science in this country. The grand discoveries of Dampier, the immortal Cook, and other navigators, English and foreign, in Australasia and Polynesia, are not included in the present design; as in this system these divisions of the globe, though more strictly connected with Asia than with any other region, and therefore arranged by some among the Asiatic islands, are considered as portions of a new denomination, (for names must be accomodated to nature, and not nature to names,) being MARITIME, but rivalling the TERRENE in extent; so that to arrange them under prior denominations, established before they were explored, would be to persist in a confusion destructive of clear ideas and accurate knowledge, which can only be obtained by a proper and judicious arrangement of the objects of any science.

DEFICIENCIES.] It now therefore only remains briefly to mention the deficiencies, which still obstruct the geography of Asia. Proceeding in the natural course, from the west and the confines of Europe, it is well known that, though Beauchamp have somewhat improved the hydrography of the Caspian shores, yet the interior of Asia Minor,

which D'Anville has justly represented as one of the most difficult objects of geography, presents an ample and illustrious scene of research to the geographic traveller. The eastern part of Asiatic Turkey remains in considerable obscurity; and the large and interesting region of Persia presents a thousand doubts and difficulties, both in regard to the ancient and modern geography *. The researches of Niebuhr only illustrate a small portion of Arabia; and the map of D'Anville is far from being perfect. Of Independent Tatary, or the wide and interesting countries on the east of the Caspian, our knowledge is more often conjectural than exact: and the same observation may be applied to Tibet, or by the indigenal appellation Butan, where the sources of the Ganges in particular remain a celebrated object of research; and the map of the lamas, so often contradictory to recent discovery, begins to lose all credit. The admeasurement of the height of some of the mountains by Colonel Crawford, who found the highest to surpass the Andes, exceeding twenty-five thousand feet above the level of the sea, bears every mark of exactness; but though I saw the detail of the observations, I do not wish to forestal the public curiosity, but only to announce his valuable labours. To the north of Tibet, Little Bucharia and the western part of Mongolia, remain in such obscurity, that even D'Anville is obliged to borrow from Marco Polo; while the travels of the emperor of China, reported by the jesuits in his train, leave little to wish for the eastern parts of Mongolia, and nearly the whole of Manshuria. The northern parts of the Birman empire, the kingdom of Laos, and the interior provinces of the island of Borneo, may also be mentioned; though of the latter a large map may be found in the work of Valentyn, which contributed greatly to increase the precise knowledge of Asia, but being written in a language little studied, and in a prolix and uninviting form, it seems to have escaped even the general knowledge of D'Anville, but is not a little interesting in a scientific library, as it evinces, among many other examples, that geography is often retrograde, and, like the ocean, loses in one part what it gains in another. It is however to be hoped that, by indicating the sources of information, there may be little future danger of retrogression.

* It is to be regretted that the excellent traveller Chardin paid no attention to geography. M. Chardin of Paris informed me that he had the original manuscript, from which he intended to print a new edition, as the best, that of Holland had been mutilated in many passages by a kind of licenser of the press, a Calvinistic clergyman, who sourly effaced any freedom in the description of manners, which did not correspond with his fanatical notions. It is pleasing to reflect that nature is of no sect.

ASIA MINOR
BLACK SEA
MEDITERRANEAN
ARCHIPELAGO
EUROPE
CONSTANTINOPLE
SEA of MARMARA
ABKHAS
Caucasian Mountains
MINGRELIA
IMERITIA
GURIA
ARMENIA
NATOLIA
CARAMANIA
ROOM
CYPRUS
SYRIAN DESERT
DIAR BEKIR
ALEPPO
Adrianople
Midich
Derkus
Silirria
Rodosto
Gallipoli
Princes I.
Scutari
Jebisa
Ismit
Dardanelles
Lemnos
Tenedos
C. Baba
Ida M.
Biga
Ulubad
Bursa
Isnik
Leflek
M. Olympus
Sabanja
Askow
Adramyti
Iron Gate
Bergamo
G. of Smyrna
Scio
Vourla
Smyrna
Durguthli
Magnisi
Belamont
Akhisar
Kaurouaouli
Tomange M.
Eskishehr
Kutaieh
Selenti
River Sarabat
Kolah
Sart
Alah Shir
Tourhan
Bullada
Bouz Tag
Scalanova
Samos
Nicari
Patmos
Riv. Meinder
Palatsha
Degnizlu
Eskihisar
Kerviker
Bandour
Estenaz
Satalia
Almali
Marri
Habitsi
Essende
Patira
Gulf of Macri
Gulf of Satalia
Cape Chelidoni
Castel Rasso
Rhodes
Co
Carpatho
Amastros
Kilios
Kilros or Gyaros
Kirah
Inichi
Sinope
Cape Krompe high land
Cape Indge low land
Kastamoni
Kemat
Elkas M.
Madgiam
Basra
Gulf of Samson
Samson
Kamlie Agh
Osmanjike
Hadjee Hamza
Maiswan
Tchouroum
Tosia
Frekli
Boli
Aksheikar
Halebi
Hindak
Duschea
Bainder
Tourbali
Kostabek
Beledgick
Angora
Kizil Irmak River
Jekil Irmak
Amasra
Unieh
Fatsia
Vona
Tokat
Sivas
Argis Dag
Kaisarea
Akserai
Nigdeh
Calaat Masman
Bostan
Ildiz M. Dag
Divrigki
Arzingkan
Erzerum
Kars
Erivan
Aragaz M.
Artveng
Baiburdi
Ispira
Achalzichi
Trebezond
Surmench
Irisch
Batum
Poti
Cutais
Anarghia
Iskuriah
Mamak
Salt Lake
Ladikich
Konich
Akshehr
Erekli
Belger M.
Ala Dag
Alanieh
Selenti
Seleskan
Anemur
Tarsous
Adona
Scanderoon Bay
Scanderoon
Marash
Bellalan
Samosat
Orfa
Bir
Antioch
Cape Porco
C. St. Andrew
Nicosia
Paphos
Limesol
Ladikieh
Jebeli
Tortosa
Tripoli
Harnah
Hems
Palmyra
Racca
Radjin
Bales
Kerkesia in ruins
River Euphrates
Mardin
Karaji Dag
Nisbin
Jefseera
Mosul
Ancient Nineveh
Riv. Tigris
Sindjar
Lake Van
Bitlis
Argish
Amadiah
Giudi M.
Bayazid
Nabat M.
Morad River
Moush
Malazkerd
Taiba
Arrasafa
Ain il Koom
Jub el Gannam
From various Authorities.

1,571

CENTRAL ASIA

From Du Halde, D'Anville, Isbrueiff &c. &c. but imperfect and inaccurate authorities.

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A.A. et J.F. fec.

Lowry sculp.

Catherinburg
Uralskoi
ORESBURG
Ural Mountains
Step of Issim
CASPIAN SEA
KIRGUSES LESSER HORDE
KIRGUSES MIDDLE HORDE
KERGUSES
KARAKALPAKS
High Level of ARAL
Turkmanian
Karakum
KHARISM
Usbeck T.
GREAT
OSHRUSHNAH
SAMARCAND
ALSHASH HORDE
FERGANA
Eastern Turkistan
CASHGAR
YARKAND
KHOTAN
Eastern Turkistan
Desert of Margiana
CORASSAN
MESHID
HERAT
BALK
BADAKSHAN
TOKARESTAN
BUCHARIAS
KOTLAN
Sea of Durrah
SEISTAN
CANDAHAR
CABUL
KUTTORE
CASHMERE
LITTLE TIBET
UNKNOWN
Arokhage
Pusheng
Candahar
Memend
Ghizni
Attock
Serinagur or Cashmere
Bamian
Gaur
Andecahyd
Andecrab
Badakshan
Koten
Yarkand
Kashgar
Aksu
Ush
Kokand
Tashkund
Turkistan
Tashkend
Bokhara
Meru Shajehan
Merv
Termed
Balkh
Amhar
Herat
Farra
Zarang
Karmin
Bost
Pusheng
Arokhage
Attock
Cashmere
Ladak
Tibet
Longitude East from Greenwich.
A.A. et J.F. fec.
Vol. II. page 25.

MODERN GEOGRAPHY.

HAVING thus given a description sufficiently ample, as is presumed, of Europe, the most interesting portion of the globe, that of the remaining three quarters shall be now pursued at a proportionate extent. Of some parts of America, and the vast central regions of Africa, little is known: but Asia presents a more extensive theme, and teems with scenes of important events in ancient and modern history.

ASIA.

EXTENT.] This great division of the earth extends, in length, from the Hellespont to what is called the East Cape; that is, from about the 26th degree of longitude east from London, into the other hemisphere, to near 190° of east longitude, or 170° west from London; being no less than 164°, or (taking the degree at a medial latitude) more than 6500 geographical miles. From the southern cape of Malacca to the cape of Cervero Vostochnoi, which braves the ice of the Arctic ocean, the breadth extends from about 2° of northern latitude to about 77°, or nearly 4500 geographical miles. If, for the sake of a rude and merely comparative calculation, one-sixth part be added for the difference between the statute and geographical mile, the length of Asia in British miles would be about 7583: and the breadth 5250.

Of the vast extent of Asia the ancients entertained most indistinct ideas; and in fact the discovery of this great division of the world may be said to have commenced with the travels of Marco Polo, the Venetian, in the end of the thirteenth century; and it was not completed, with regard to the eastern extremities, till the recent travels were published in Russia, and the voyages of Bering, Cook, and La Perouse. It is now well known that Asia is limited, on the east, by a strait which divides it from America; and which in honour of the discoverer is called Bering's Strait. The northern and southern boundaries are the Arctic and Indian oceans; in which last many large islands, particularly that of New Holland, now more classically and properly styled by some *Australasia**, afford a vast additional extent to this quarter of the globe. The limits between Asia and Europe have already been discussed; but to the arguments then adduced may be added, that to assign any part of the Volga to Asia is to embroil all precise notions of Geography. For the bason of that grand river, and all its confluent streams, must be regarded as inseparable and indivisible. In the new boundaries, the confluent streams of the river Ural must of course be included, so that the true boundary is the Kirgus desert. †

ORIGINAL POPULATION.] The population of Asia is by all authors allowed to be wholly primitive and original; if we except that of the Techucks or Tchuktchi, who,

* More briefly *Notasia*, from the Greek, as from them we receive the name of Asia: and in such new terms the Grecian language is justly and properly preferred.

† When it was stated that Herodotus doubted between the Tanais and Phasis, it might have been added that Æschylus prefers the Phasis. See Arr. Por. Struchii.

by the Russian travellers and Mr. Tooke, are supposed to have passed from the opposite coast of America. A few colonies have migrated from Russia to the northern parts, as far as the sea of Kamtchatka: and there are well known European settlements in Hindostan and the isles to the S.E.; but the first serious attempt to colonize what is esteemed a part of Asia was the recent settlement at Port Jackson. With these and other trifling exceptions, Asia presents a prodigious original population, as may be judged from the following table, which will be found more clear than any prolix discussion on the subject.

LINNÆAN TABLE OF THE NATIONS AND LANGUAGES IN ASIA.

Ordo.	*Genus.*	*Species.*
I. Assyrians.	Assyrians.	Chaldee.
	Arabians.	Hebrew, &c.
II. Scythians.	Persians.	Armenians.*
	Scythians *intra et extra Imaum*, &c.	
III. Sarmats.	Medes.	Georgians.
	Parthians.	Circassians.
IV. { Seres. / { Indi.	Hindoos.	Northern and Southern, &c.
V. Sinæ.	Chinese.	
	Japanese.	†
Barbaric nations from north to south, and according to the degrees of barbarism.		
VI. Samoieds.	Ostiacs, Yurals, &c.	
VII. Yakuts.	Yukagirs.	(Expelled Tatars, according to Tooke and Lesseps.)
VIII. Koriacs.	Techuks or Tchuktchi.	‡
IX. Kamchadals.	Kurillians.	§
X. Mandshurs or Tunguese.	Lamuts.	(Ruling people in China.)
XI. Monguls.	Kalmucs.	Soongars.
		Torguts.
		Burats, &c.
XII. Tatars or Huns.‖	Turks.	Nogays.
	Khasars.	Bashkirs.
	Uzes.	Kirguses or Kaizaks.
	Siberians.	Teleuts.

Besides these numerous original nations, the Malays and Asiatic islanders constitute another large and distinct class of mankind, with a peculiar speech, in the south of the extensive continent of Asia.

[PROGRESSIVE

* The Parsi and Zend are cognate with the Gothic, Greek, Latin, according to Sir William Jones. Indian Dissert. vol. i. p. 206. The Pehlavi is Assyrian or Chaldaic. Id. 187, 188. 206.

† These have a Tataric form and face: they are probably highly civilized Tatars, Monguls, or Mandshurs.

‡ From the opposite coast of America. Tooke's Russia. The Yukagirs are a tribe of the YAKUTS (around Yakutsh), and both are expelled Tatars. Tooke's View, ii. 80. Lesseps, ii. 312.

§ These resemble the Japanese.

‖ After the destruction of Attila's swarms, and the effects of unfortunate inroads, the Huns became subject to the Monguls, who under Zingis or Genghiz-Khan, Timur, &c. constituted the supreme nation in Asia.

The great share of population which Europe has received from Asia will appear from the following little table:

PRIMÆVAL INHABITANTS.

Ordo.	*Genus.*	*Species.*
I. Celts.	Irish	Erse, Manks.
	Welsh.	Cornish.
	Armorican.	
II. Fins (chief god *Yummala.*)	Finlanders.	Permians or Biarmians.
	Esthonians.	Livonians.
		Votiacs and Chermisses.
	Hungarians.	Voguls and Ostiacs.

COLONIES

Vol. II. page 512.

PROGRESSIVE GEOGRAPHY.] The progressive geography of this quarter of the globe might afford an important and interesting subject of discussion, if treated at due length, as embracing the various discoveries which, at long intervals of time, successively disclosed its vast extent. The most authentic information concerning the knowledge of the ancients is to be found in the geography of Ptolemy; but modern commentators differ in the elucidation of his text. The extreme points of discovery mentioned by Ptolemy are, towards the Indian Ocean, the town of Sina; and, inland, in the parallel of the south of the Caspian, Sera, the metropolis of the Seres. That able geographer D'Anville has expressed his opinion, concerning Sina, in the following terms:

"The oriental geographers, to whom the country of the Sines must have been well known, comprise its capital in the zone of the first climate; which rising to twenty degrees and a half does not extend to China: but by an extravagant error *Sinarum Metropolis* has been applied to Nañ-kin in the thirty-second degree. The imperial rank of the last mentioned city, to which it did not attain till towards the close of the fourth century, could not have caused it to be thus distinguished by Ptolemy, who lived under the Antonines, about two ages before. The Chinese do not acknowledge the name that we have given to their nation. They are fond of borrowing for the purpose of distinction, the name of some dynasties, whose memory is precious to them: and above all, from that of Hañ, which commenced two hundred and some years before the Christian æra, they denominate themselves Hañ-ngiñ, or the people of Hañ; and by an idea which they have of the most advantageous situation of their country, they name it Tchon-koué or the middle kingdom. But the name of Sines is preserved in that of Cochin-China, which, without the alteration that it has suffered on the part of Europeans, is Kao-tsii-Sin. The Arabs have found the name of Sin in the country where Ptolemy knew the Sinæ. The name of Singi, which the Indians as well as the Arabs give to the sea which involves this country, is a derivation from the same name. This name of Siñ has followed the progress of navigation and commerce, beyond the true limits of the ancient country of Siñ; having been extended by the Portuguese, who preceded the other western nations in these remote longitudes, and become common among those which have followed. And that the country of Sinæ ought not to be transported to China, as it appears in all the maps which have preceded those of the author of the present work, is an article in ancient geography which may justify the foregoing discussion.

"The capital of the Sinæ is named Thynæ by Ptolemy; and according to the Latin version, which is regarded as a text, Sinæ. Its position appears at a distance from the sea, at the mouth of a river named Cotiaris, having communication on the left with another river, whose name was Senus. This then can be no other than the great river of Camboja; which, eighty leagues above its mouth, divides into two

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COLONIES FROM ASIA.

III. Scythians or Goths *(Odin)*.	Icelanders, Norwegians.	
	Swedes, Danes.	
	Germans.	Swiss, Frisic.
	English.	Flemish, Dutch.
IV. Sarmats or Slavons *(Peran)*.	Poles.	Heruli.
	Russians.	Vendi.
	Kossacs.	Lettes.

The inhabitants of France, Italy, and Spain are also of Asiatic origin; and speak corrupted Roman, which, like the Greek, is a polished dialect of the Gothic, according to Sir William Jones, and other able antiquaries. The Heruli, Wends, and Lettes, used mixed and imperfect dialects of the Slavonic. Critical Review, vol. xxvii. p. 129.

branches. The principal, or that of the right, corresponding with the Cotiaris, and which is called the Japanese river, conducts to a city of which the Arabian geographers speak as being very celebrated for its commerce under the name of Loukin; and this position appears to answer to that of Thinæ in Ptolemy. But the city of the Sinæ, named Sin̄ by the Arabian geographers, and in the Chinese memoirs Tehen̄-tehen̄, is a position more remote than Loukin, and is found distinguished by the name of Sin̄-hoa, as having been the most flourishing city of Cochin-China, before its port was destroyed by alluvions of sand. The name of Thoan̄-hoa, which its district bears, seems, together with the other circumstances reported, to favour the application of the name of Thinæ to this city also. Thinæ is mentioned diversely in many authors of antiquity. But what cannot have a place here will be found in a memoir, contained in vol. xxxii. of the Memoirs of the Academy, on the limits of the world known to the ancients beyond the Ganges [1]."

So far this industrious geographer, whose reasoning must, at the first glance, be pronounced to be vague and inconclusive. Nor has he been able to avoid that rock upon which many geographical theories have split, the attempt to trace ancient appellations by modern names: while the latter, though bearing even strong resemblance, may be very recent, and have no connexion whatever with the ancient etymon. The opinion of D'Anville has since been ably controverted by Gossellin [2]; who seems to demonstrate that the Golden Chersonese of Ptolemy is the southern part of the kingdom of Pegu, not Malacca as D'Anville supposed; and that the capital of the Sinæ is Tanaserim in the west of the country of Siam. In this Gossellin seems well founded; though in a later work he certainly has too much restricted the knowledge of the ancients concerning Africa.

With regard to the other extreme position, that of Sera, while D'Anville ridicules the idea of transporting it to Pekin, he himself seems to have placed it too much to the east, when he infers, from very vague circumstances, that it is Can-Tcheou, a town of Tangut, now comprized in the Chinese province of Shen-si. There can on the contrary be little doubt, from the aspect of Ptolemy's maps, that his Serica is the country now called Little Bucharia. Nor is there any reason to believe that the ancients had ever passed the great desart of Cobi. His Scythia beyond the mountains of Imaus, or Belur Tag, is by himself restricted to a *narrow strip* on the east of these mountains; and seems now to correspond with the mountainous districts on the west and north of Little Bucharia.

From this discussion it will appear that not above one quarter of Asia was known to the ancients; and this knowledge was little encreased till Marco Polo, whose travels became well known in Europe in the beginning of the fourteenth century, established a memorable epoch in geography, by passing to China, and disclosing the extent of that country, the islands of Japan, and a faint intelligence of other regions, illustrated and confirmed by recent accounts. The wide conquests of the famous Zingis, in the beginning of the thirteenth century, first opened the discovery of the distant parts of Asia, the Monguls, whose sovereign he was, being situated to the east of the Huns, who had before diffused terror over Europe. The first seat of the Monguls was in the mountains which give source to the river Onon; and at a short distance to the S. W. was Kara-kum, the first capital of the Mongul empire. The victories of Zingis extended from Cathay, or the northern part of China, to the river Indus; and his successors extended them over Russia, while their inroads reached Hungary and Germany. This widely diffused power of the Monguls naturally excited an attention

[1] D'Anville, Ancient Geography, p. 563. London, 1791. 8vo.
[2] Geographie des Grecs analysée. Paris, 1790, 4to.

and

and curiosity, never stimulated by a number of petty barbaric tribes; and at the same time facilitated the progress of the traveller, who, as in Africa at present, had been formerly impeded by the enmities of diminutive potentates. By force of arms the Monguls also first opened the obscure recesses of Siberia. Sheibani Khan, A. D. 1242, led a horde of 15,000 families into those northern regions; and his descendants reigned at Tobolskoy above three centuries till the Russian conquest [3]. Two European travellers, Carpini and Rubruquis, were commissioned to inspect the power and resources of the new empire of the Monguls; the latter found at Kara-kum a Perisian goldsmith, employed in the service of the Khan; and by Carpini's relation it appears, that, from their brethren in Siberia the Monguls had received some intelligence concerning the Samoieds.

Thus the discovery of Asia, which had been nearly dormant since the time of Ptolemy, began to revive in the thirteenth century. Yet after the publication of Marco Polo's travels little was done for two centuries; and the authenticity of his accounts even began to be questioned *. One man indeed, of great mental powers, was impressed with their veracity, and in consequence accomplished a memorable enterprize. This was Christoval Colon, or as we call him Christopher Columbus, who was led by the relation of Polo to conceive that, as Asia extended so far to the east, its shores might be reached by a short navigation from the western extremity of Europe. In this erroneous idea, when that great man discovered the islands now called the West-Indies, he thought that he had arrived at the Zipango of Polo, or Japan; and thus the name of India was absurdly bestowed on those new regions.

After the discovery of America and the Cape of Good Hope, the maritime parts and islands of Asia were successively disclosed. Yet the recent voyages of the Russian navigators, of our immortal Cook, and of the unfortunate La Perouse, evince that much remained to be done; and concerning the interior of Siberia scarcely any solid information arose, till Peter the Great, after the battle of Pultowa, sent many Swedish prisoners into that region: and Strahlenberg, one of the officers, published an account of Siberia. This knowledge was greatly improved and increased by the well known journies of Pallas, and others. Yet our knowledge of Asia is far from being perfect, especially in respect, to Daouria, and other regions near the confines between the Russian and Chinese empires; not to mention central Asia in general, Tibbet or Tibet, and some more southern regions; nor had even the geography of Hindostan been treated with tolerable accuracy till Major Rennell published his excellent map and memoir. It is almost unnecessary to remind the reader of the recent discoveries to the south of Asia, in which the interior, and southern coast, of New Holland remain to be explored: with other defects of smaller consequence. But while many improvements are wanted in the geography of several European countries, it is no wonder there should be great deficiencies in that of the other quarters of the globe.

The importance of the subject will excuse the length of these remarks on the progressive geography of Asia, than which no part of the science can be more justly interesting; from the vast extent of that portion of the globe; from the great variety of nations, civilized and barbarous, by whom it is peopled; and from its intimate connexion with the destinies of Europe, which it has frequently overawed, while the savage tribes of Africa and America can never become formidable to European arts or happiness.

[3] Gibbon, xi. 424.

* From the map of the world by Andrea Bianco the Venetian, 1440, it sufficiently appears that the discoveries of Polo had, even in his native country, been rather diminished than encreased. See Formaleoni, Saggio fulla Nautica Antica dei Veneziani. Ven. 1783. 8vo. See also the description of Asia by Pope Pius II. who does not appear even to have seen the travels of Polo.

RELIGIONS.] The religions of Asia are various, and will be illustrated in the accounts of the several countries. The climate also admits of every variety, from the equator to the arctic sea.

SEAS.] Though Asia cannot vie with Europe in the advantages of inland seas, yet, in addition to a share of the Mediterranian, it possesses the Red Sea, the Arabian Sea, and gulph of Persia; the bays of Bengal and Nankin; and other gulphs, which diversify the coasts much more than those of Africa or America, and have doubtless contributed greatly to the early civilisation of this celebrated division of the earth.

RED SEA.] The Red Sea, or the Arabian gulph of antiquity, constitutes the grand natural division between Asia and Africa; but its advantages have chiefly been felt by the latter, which is entirely destitute of other inland seas; Egypt and Abyssinia, two of the most civilised countries in that division, having derived great benefits from that celebrated gulph, which from the straits of Babelmandeb to Suez extends about 21°, or 1470 British miles; terminating not in two equal branches, as delineated in old maps, but in an extensive western branch, while the eastern ascends a little beyond the parallel of Mount Sinai.

The Persian gulph is another noted inland sea, about half the length of the former, being the grand receptacle of those celebrated rivers the Euphrates and the Tigris.

The other gulphs do not afford such strong features of what are properly termed inland seas; if the Euxine be excepted, which has already been briefly described in the general survey of Europe*. But the vast extent of Asia contains seas totally detached, and of a different description from any that occur in Europe, or other quarters of the globe. Such is the Caspian sea, extending about 10° or 700 miles in length, and from 100 to 200 in breadth. Strabo and Pliny idly supposed this sea to be a gulph, extending from the northern ocean; while Herodotus, many centuries before, had expressed more just ideas. Yet the Caspian seems at one period to have spread further to the north, where the desarts are still sandy and saline, and present the same shells that are found in the Caspian: but the chain of mountains which branches from the west of the Urals to the north of Orenburg, and reaches to the Volga, must, in all ages, have restricted the northern bounds of the Caspian†. To the east this remarkable sea, in the opinion of most geographers, extended at no very remote period to the lake of Aral; the desarts on that side presenting the same features as those to the north, though there be now an elevated level between the sea of Aral and the Caspian, occasioned perhaps by the quantity of sand rolled down by the Gihon, the Sirr, and other rivers which now flow into the sea of Aral. The northern shores are low and swampy, often overgrown with reeds; but in many other parts the coasts are precipitous, with such deep water that a line of 450 fathom will not reach the bottom. This sea is the receptacle of many important rivers, as the Jemba, the Ural or Jaik, and the Volga from the north: the Kuma, Terek, Kur, and Kizil Ozen from the west: those from the south are of small moment; but from the east the Caspian is supposed still to receive the Tedjen; and the Gihon, or Oxus of antiquity, flowed into the Caspian, at least by one or two branches, till it bent northward and joined the sea of Aral. Besides herrings, salmon, and other fish, with porpuses and seals, this sea produces sterlet, and great numbers of excellent sturgeon; which last in particular ascend the Volga, and supply kaviar and other articles of exportation.

* The form of the Euxine has been greatly improved, from recent observations, in Mr. Arrowsmith's maps; the breadth from the southern cape of Crimea to the opposite Asiatic promontories being found to be far less than formerly supposed.

† See Pallas, VII. 24. The mountains of Obtschei Sirt, between the Volga and the Yaik, which are a continuation of the Uralian chain, present horizontal beds, and the shells of the Caspian are found no further to the north.

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The birds most generally seen are storks, herons, bitterns, spoon-bills, with many others; particularly a kind of heron of a pure white, while the tips of the wings, the beak and feet are scarlet.[4] The best haven in the Caspian is that of Baku: that of Derbent is rocky, and that of Ensili, or Sinsili, not commodious, though one of the chief ports of trade.

ARAL.] About 100 miles to the east of the Caspian, is the sea or lake of Aral, which is about 200 miles in length, and about 70 miles in breadth; receiving the river anciently called Iaxertes, more recently the Sirr or Sihon, and the river Gihon, the Oxus of antiquity; both streams of considerable course, flowing from the mountains of Belur Tag or Imaus. The sea of Aral being surrounded by sandy desarts, has been little explored; but it is salt like the Caspian, and there are many small saline lakes in the vicinity.

BAIKAL.] Another remarkable detached sea is that of Baikal in Siberia, or Asiatic Russia, extending from about the fifty-first to the fifty-fifth degree of north latitude, being about 350 British miles in length, but its greatest breadth not above 35. The water is fresh and transparent, yet of a green or sea tinge, commonly frozen in the latter end of December, and clear of ice in May. The Baikal is at particular periods subject to violent and unaccountable storms, whence, as terror is the parent of superstition, probably springs the Russian name of Svetoie Morè, or the Holy Sea.[5] There are many seals and abundance of fish, particularly a kind of herring called omuli. Several islands appear, and that of Olchon has sulphureous springs. The chief river flowing into the Baikal is the Salenga, from the south; while from the north it admits the Angara, which joins the prodigious stream of the Yenisei.

Of the other Asiatic seas a minute account would be superfluous; but a few observations may be offered on the remarkable strait which divides Asia from America. This strait, which was discovered by Bering and afterwards by Cook, is about 13 leagues, or near 40 miles in breadth. Bering, a Dane, was employed by Peter the Great in 1728, and actually passed this strait, probably in the usual fogs of the climate, without discovering land to the east; but our great navigator gave the name of the Danish adventurer to these straits, when he afterwards explored them with his usual accuracy.[6] On the Asiatic shore is the East Cape; and on the American, that called Prince of Wales. The depth of the strait is from 12 to 30 fathoms. To the north of these straits the Asiatic shore tends rapidly to the westward; while the American proceeds nearly in a northern direction, till, at the distance of about four or five degrees, the continents are joined by solid and impenetrable bonds of ice.

In the Asiatic seas there are numerous shoals, or sand banks; but few of them have been described as conducive to human industry.

RIVERS.] The chief rivers of Asia are the Kian Ku and Hoan Ho, the Lena, the Yenisei, and the Ob, streams which rival in the length of their course any others on the globe. Next in consequence are the Amur, and the Maykaung of Laos, if the course be rightly delineated, the Sampoo or Burrampooter, and the Ganges; compared with all which the Euphrates and Indus hide their diminished heads. A more particular account of these rivers will be given under the respective regions.

MOUNTAINS.] It has been recently ascertained that the mountains of this continent correspond with its extent. Chimborazo was esteemed the highest on the globe, till it

[4] Tooke's View of the Russian Empire, i. 239.

[5] Ibid. i. 141.

[6] Pennant, Arc. Zool. clxxxix. See Muller's Voyages et Découvertes des Russes. Amst. 1766, 2 vols. 12mo. Vitus Bering had passed to the service of Peter the Great in 1707, and died on the 8th of December, 1741, having discovered the American capes, Elias and St. Hermogenes, vol. i. 142. 254. 296.

was discovered that peaks in the Himmala are from 22,000 to 28,000 feet in altitude above the ocean.* The Uralian chain, forming a boundary of Europe, has been already described. The Altaian chain may be classed among the most extensive on the globe, reaching from about the seventieth to the hundred and fortieth degree of longitude east from London, or about 5000 miles, thus rivalling in length the Andes of S. America. But as chains of mountains rarely receive uniform appellations, except from nations highly civilized, the Altaian chain, beyond the sources of the Yenisei, is called the mountains of Sayansk; and from the south of the sea of Baikal, the mountains of Yablonnoy; branches of which extend even to the country of the Techucks, or extreme boundaries of Asia. To the south of the Altaian ridge extends the elevated desart of Cobi or Shamo, running in a parallel direction from east to west; and the high region of Tibet may be included in this central prominence of Asia. The chain of Alak may perhaps be regarded as a part of the Altaian, branching to the south, while the Taurus, now known by various names in different countries, was by the ancients regarded as a range of great length, reaching from cape Kelidoni on the west of the gulf of Satalia, through Armenia, even to India: but this last chain has not impressed modern travellers with the same idea of its extent.† Other considerable ranges of mountains are Bogdo, Changai, Belur, those of Tibet, the eastern and western Gauts of Hindostan; and the Caucasian chain between the Euxine and Caspian; all which will be afterwards more particularly described.

The Asiatic governments are almost universally despotic, and the very idea of a commonwealth seems to be unknown. The mildest systems are perhaps those found in Arabia.

In arranging the extensive states of Asia according to their population and relative consequence, the first and chief rank, beyond all comparison, must be assigned to the Chinese empire. But that prodigious denomination being estranged from Europe, and having in no age exerted the smallest influence on its destinies, it seems preferable in this instance, first to consider two powerful states, intimately blended with European policy. The Turkish empire in Asia constitutes a natural and easy transition from the description of Europe; and the Russian empire, though in population far inferior, yet in military and political force transcends that of China.

From the Russian empire in Asia the transition is easy to that of China, a bordering state; after which shall be described Japan, and a new great power, the Birman empire. Hindostan and Persia being now divided into several distinct sovereignties, and Arabia containing many independent states, the scale of political importance becomes transitive and indistinct; and may justly yield in such cases to mere geographical arrangement. Hence the smaller states of India beyond the Ganges, or between Hindostan and China, will follow the Birman empire, to which, or to China, they may perhaps soon be subjected. A western progress leads to Hindostan, Persia, and Arabia: and a short account of the various interesting and important islands in the Indian, and in the Pacific, oceans, will close this grand department of the work.

* See the article Mountains, in Chap. I. of Indostan.

† See Pliny, lib. v. c. 27, who says that the Imaus, the Emodus, and the mountains running through the centre of Persia, including the Niphates of Armenia, and even the Caucasus itself, are all parts of the Taurian chain, which thence spreads S. W. along the Mediterranean. But this great southern chain is unknown to modern geography, and seems rather theoretical in reducing mountains of various directions to one series. The northern chain of Natolia was called Anti Taurus by the ancients.

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TURKEY IN ASIA.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs, and Antiquities.

EXTENT.] THIS region extends from the shores of the Egean sea, or Archipelago, to the confines of Persia; a space of about 1050 British miles. The boundaries towards Persia are rather ideal than natural, though somewhat marked by the mountains of Ararat and Elwend. In the north the Turkish territories are now divided from the Russian by the river Cuban, and the chain of Caucasus; in the south they extend to the junction of the Tigris and the Euphrates, which last river, for a considerable space, divides the Turkish possessions from those of the Arabs. From the river Cuban to the junction of the Tigris and Euphrates, may be about 1100 British miles. Others enlarge the nominal extent to the mouth of the Euphrates, with some small isles in the Persian gulf; a further space of about 120 miles. Bussora is certainly Turkish at present.

This extensive territory, which in itself would constitute an empire, could it resume its pristine population, is divided into nine or ten provinces. Natolia, the most westerly, is followed by Karaman in the south; and Roum in the north east. To the north of Armenia are Guria, or Guriel, Mingrelia, and the Abkhas of Caucasus, the ancient Circassians. Armenia is also styled Turcomania; to the south of which are Kurdistan, and Irak Arabi, a part of ancient Persia around the celebrated capital, Bagdad. The ancient Mesopotamia, between the Tigris and the Euphrates, now partly corresponds with the province of Algezira; and the classical name of Syria or Soria is still allotted to the celebrated countries along the eastern extremities of the Mediterranean. Some of these provinces are of comparatively recent acquisition; Bagdad having belonged to Persia till 1638; while on the contrary Erivan, reconquered by the Persians in 1635, has remained free from the Turkish domination.

These provinces are subdivided into governments, arbitrarily administered by Pashas, a detail of which would afford little satisfaction, especially in the present declining state of the Turkish empire.

ORIGINAL POPULATION.] The original population of these regions consisted chiefly of Scythic nations, mingled with a few Assyrians from the south. But a com-

plete illustration of this subject would be foreign to the nature of this work. At present the ruling language is the Turkish, the modern Greek is scarcely known now at Smyrna; but the Arabic, Syrian, Persian, and Armenian, with various dialects used by the tribes on the Black sea, indicate the diversity of population.

PROGRESSIVE GEOGRAPHY.] The progressive geography may be traced from the remotest antiquity to modern times; but Turkish barbarism and the danger of travelling among the wild Turcomans, have prevented the precision of recent knowledge from adding complete illustration to the geography of this part of Asia.

HISTORICAL EPOCHS.] The chief epochs of Turkish history have already been mentioned, in describing their European possessions. Armenia and Georgia were subdued by the Turks in the eleventh century, and the whole of Asia Minor rapidly followed. Their kingdom of Roum extended from the Euphrates to Constantinople, and from the Black sea to the confines of Syria. Successive warlike princes acquired additional territory from the Mamaluks of Egypt, and the Persians. Syria, formerly an appanage of Egypt, was conquered by Selim II. in 1516; Tauris and Diarbekr, which last had formerly belonged to Persia, were subdued by the same monarch; and in 1589 Abbas, the great sovereign of Persia, was obliged to yield three provinces to the Ottomans, though he extended his conquests to the east; and Bagdad, as already mentioned, with the surrounding province of Irak Arabi, became subject to the Turks in 1638. The present limits seem to have been fixed by the treaty between the Porte and Persia, 1736: since which period the Turks have been chiefly occupied in their own defence against the Russians; but their ascendancy over Persia had been such, that in 1727 they had acquired the territory from Erivan to Tauris, or Tebriz, and thence to Hamadan, a boundary which seems indeed more precisely marked by nature than the present.

ANTIQUITIES.] The antiquities of Asiatic Turkey, once the chosen seat of the arts, are numerous, and important, but have been so repeatedly described as to have become trivial themes, even to the general reader. The splendid publications by the society of Dilettanti, and the descriptions of Balbec and Palmyra, will convey a more just idea of those august remains than the most elaborate description. The most splendid ruins are those of Palmyra, by some supposed to be Tadmor in the desert *, about 150 miles to the S. E. of Aleppo, at the northern extremity of the sandy wastes of Arabia. It is conceived, with some probability, that the sands must here have encroached upon a territory formerly fertile; but as there is no river the situation remains equally surprising, for a capital of such opulence. It is now understood that this city owed its splendour to the Indian trade, conducted by caravans to the mercantile shores of Syria.

Balbec, the ancient Heliopolis, is about 50 miles to the N. W. of Damascus; the most remarkable ruin being that of a temple, supposed to have been dedicated to the sun.

Recent investigation has disclosed another remarkable scene of antiquities, in the site and celebrated plain of Troy, which have been exhibited by Mr. Morritt, and other travellers, with laudable zeal for classical lore. The Simois is now demonstrated to be a considerable stream, which runs into the Hellespont, nearly opposite to the New Castles constructed under the order of Tott. The Scamander, which formerly flowed into the western side of the Simois, having been diverted by the Romans into a different channel, this unnoted circumstance not a little baffled antiquarian research. The tombs of remote antiquity having been constructed like the large barrows of our ancestors, in the lasting form of small hills, they withstood the assaults of time, or avarice; and our

* See Introductory Memoir.

travellers

travellers indicate, with some plausibility, that of Hector, behind the site of Troy; those of Achilles, and Patroclus on the shore; and a few others of the Homeric heroes *.

* See Morritt's vindication of Homer, &c. 1798, 4to; Dallaway's Constantinople; and Dalzell's translation of Chevalier's memoir. The map of Dallaway is inferior to that of Morritt, but adds a few modern names. A curious general map of the Troad, Hellespont, &c. may be found in the edition of the Voyage d'Anacharsis, Paris, An vii. 1799, drawn up by the Barbié du Bocage, from a drawing of the plain of Troy taken in 1786, by the direction of the Count Choiseul Gouffier, and of the coasts in 1785-6-7 by Truguet. This last excellent map perfectly corresponds with that of Morritt, except that the latter supposes the Thymbrius to join the Simois from the north; and the former from the south. There is yet wanted an exact translation, with notes, of the long description by Strabo; and a comparative map arranged solely according to that description. Du Bocage observes, p. 67, that in his opinion new Ilium held the very site of ancient Troy, as Strabo says it stood upon a height, which corresponds with the hill of Bounar-Bachi. The rivulet of Kirké-Keuzler, he agrees is the Scamander of Homer; but supposes that the new settlers applied that name to the larger river, or Simois of Homer, which rises near the summit of Ida, and is now called Menderé-Sou. The second volume of the *Voyage Pittoresque de la Grece*, by M. Choiseul, is about to appear. As M. Chevalier was employed by M. Choiseul, and made use of a memoir printed under his eye, it is literary justice to restore this curious discovery to its real author.

CHAPTER II.

Population, &c.

MANY of the topics assigned to this chapter have been already treated in the description of European Turkey. The Turkish empire in Asia is estimated at 470,400 square miles; and the population at ten millions; which, allowing eight for the European part, will render the total 18,000,000. Geographers have, contrary to the united voice of travellers, considered Egypt as a Turkish province: while in fact it was only occasionally tributary, and was subject to the military aristocracy of the Beys. Some of the maritime Mahometan powers have likewise assisted the Porte with ships in time of war; but cannot with any justice be regarded as subject to the Ottoman sceptre. The population of these African states is therefore foreign to the present consideration.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs. — Language. — Literature. — Education. — Universities. — Cities and Towns. — Edifices. — Roads. — Inland Navigation. — Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the Turks have been briefly described in the former volume; but the Asiatic character is deeply impressed upon the subject nations. So lax is the government that hords of banditti carry on their depredations almost within sight of the capital. Near Erzeron Tournefort found encampments of Kurds [1]. In the summer the Kurds pass from Mousoul to the sources of the Euphrates; and they are never punished either for robbery or murder. They are a pastoral people, conducting their herds from one country to another; and in the time of that traveller they extended as far west as Tokat; where other hords, those of the Turcomans, began to appear *. The Armenians, though they profess the Christian faith, retain many singular manners and customs; but they are described as a sensible and polite people, and the chief conductors of the Levant trade, for which office they are singularly qualified by frugality and enterprize. They embrace the Eutychian persuasion, which only admits one nature in Jesus Christ; a tenet which renders them irreconcileable enemies of the Greeks.

The Druzes, a remarkable people of Syria, have attracted the observation of many writers. Though they affect the exterior appearance of Mahometans, yet they seem to have little or no religion; but even among them there are sects, who do not accord in the modes of disbelief. According to Volney, they practise neither circumcision, prayers, nor fasting; they observe neither festivals nor prohibitions. They drink wine, eat pork, and allow marriage between brothers and sisters, though not between fathers and children. Near Antioch there is said to be a sect, which professes some of the most dissolute tenets of paganism. The Maronites are Christians, who acknowledge the superiority of the Roman church, but have many minute peculiarities.

In the northern extremities of Asiatic Turkey, there are also many tribes who have adopted singular manners and customs. Six or seven languages are spoken in the country between the Euxine, and the Caspian [2]. The Abkhas are, by the Circassians, called Kush-Hasip, which implies a people beyond the mountains: they retain some traces of Christianity. The Tsherkess, or Circassians, occupy an extensive territory, and might become formidable if they were united. Part of the Circassians is now subject to Russia; but little alteration can have taken place in their manners. The

[1] ii. 190.

* See Volney, i. 369, who says that the language of the Turcomans is the same with that of the Turks, but the mode of life nearly similar to that of the wandering Arabs. Their property consists in sheep, with some goats, camels, and buffaloes. He seems to acquit the Turcomans of the charge of robbery.

[2] Ellis's Memoir, p. 14.

princes cannot possess lands: the nobles are chosen by the princes from the vassals, or third class. Public measures are proposed by the prince, and debated by the nobles and deputies of the people, on a spot destined for this purpose, near the royal residence. The agriculture of the Circassians barely suffices for their own consumption; but they export sheep, and horses, and the slaves taken in their predatory excursions. The beauty of the Circassian women having been so much vaunted, the following extract from a recent and authentic author, may perhaps interest the reader [3].

"Girls are brought up by the mother. They learn to embroider, to make their own dress, and that of their future husbands. The daughters of slaves receive the same education; and are sold according to their beauty, from twenty to one hundred pounds, and sometimes much higher. These are principally Georgians. Soon after the birth of a girl, a wide leather belt is sewed round her waist, and continues till it bursts, when it is replaced by a second. By a repetition of this practice their waists are rendered astonishingly small; but their shoulders become proportionably broad, a defect which is little attended to on account of the beauty of their breasts. On the wedding night the belt is cut with a dagger by the husband, a custom sometimes productive of very fatal accidents. The bridegroom pays for his bride a marriage present, or Kalym, consisting of arms, or a coat of mail; but he must not see her, or cohabit with her, without the greatest mystery. This reserve continues during life. A Circassian will sometimes permit a stranger to see his wife, but he must not accompany him. The father makes, the bride a present on the wedding day, but reserves the greater part of what he intends to give her till the birth of her first child. On this occasion she pays him a visit, receives from him the remainder of her portion, and is clothed by him in the dress of a matron the principal distinction of which consists in a veil. Until this time the dress of the women is much like that of the men, excepting that the cloak is longer, and frequently white, a colour never worn by men. The cap too is generally red or rose-coloured.

"Before marriage the youth of both sexes see each other freely, at the little rejoicings which take place on festivals. Before the ball the young men shew their activity, and address, in a variety of military exercises; and the most alert have the privilege of chusing the most beautiful partners. Their musical instruments are a long flute, with only three stops, a species of mandoline, and a tambourin. Their dances are in the Asiatic style, with very little gaiety or expression. The steps seem very difficult, but not graceful.

"The Circassian women participate in the general character of the nation; they take pride in the courage of their husbands, and reproach them severely when defeated. They polish and take care of the armour of the men. Widows tear their hair, and disfigure themselves with scars, in testimony of their grief. The men had formerly the same custom; but are now grown more tranquil under the loss of their wives and relations. The habitation of a Circassian is composed of two huts, because the wife and husband are not supposed to live together. One of these huts is allotted to the husband, and to the reception of strangers; the other to the wife and family: the court which separates them is surrounded by palisades, or stakes. At meals the whole family is assembled; so that here, as among the Tartars, each village is reckoned at a certain number of kettles. Their food is extremely simple, consisting of only a little meat, some paste made of millet, and a kind of beer composed of the same grain, fermented."

The Mameluks of Egypt were, as is well known, slaves regularly imported from Circassia and Georgia. In Imeritia, Mingrelia, and Guriel, as well as in Georgia,

[3] Ellis's Memoir, p. 24, &c.

which

which forms a Persian province, the barons have power of life and death over their vassals; and form a powerful aristocracy, formidable to the prince, who resides at Cutais [4]. The Dadian, or chief of Mingrelia and Guriel, though possessed of a more extensive country, is tributary to the former sovereign. The religion of all is the Greek; and these provinces can scarcely be regarded as subject to Turkey.

In general the most striking feature of manners and customs, in the Turkish empire, is that half the people may be considered as somewhat civilized, while the other half are pastoral wanderers, ranging over extensive wastes. This laxity of government renders travelling in Asia Minor very unsafe; and has proved a great impediment to any exact geographical knowledge of these regions. Under a prudent government the wandering hords of Turkomans and Kurds would be expelled; and regular troops and garrisons maintained on the frontiers; whence industry and the arts might again visit this classical territory.

Cities and Towns, &c.] The capital of the Turkish empire has been already described. Next in dignity and importance is the city of Haleb, or Aleppo, supposed to contain about 250,000 inhabitants. This city is constructed with some elegance, and the tall cypress trees, contrasted with the white minarets of numerous mosks, give it a most picturesque appearance [5]. The buildings and population seem to be on the increase; but the adjacent villages are deserted. The chief languages are the Turkish and Arabic*. The manufactures of silk and cotton are in a flourishing condition; and large caravans frequently arrive from Bagdad and Bassora, charged with the products of Persia and India; Aleppo being the modern Palmyra. Consuls from various European powers reside here, to attend the interests of the respective nations.

Damascus is supposed to contain about 100,000 souls. It was formerly celebrated for the manufacture of sabres, which seem to have been constructed, by a method now lost, of alternate thin layers of iron and steel, so as to bend even to the hilt without breaking, while the edge would divide the firmest mail. When Timur subdued Syria, about the beginning of the fifteenth century, he ordered all the artists in steel to migrate into Persia. The manufactures now consist of silk and cotton, chiefly mingled together; and excellent soap is made of oil of olives, with kali, and chalk. From the Mediterranean are imported metals and broad cloths; and the caravans of Bagdad bring Persian and Indian articles. This city also increases by the gradual depopulation of the villages and country, which last always present the chief symptoms of national prosperity, or decline. The Pashalik of Damascus is esteemed the first in Asia; and the office of Pasha has, in the decline of the Turkish empire, become in some measure hereditary, with absolute power of life and death, and without any appeal.

Smyrna.] Smyrna may be regarded as the third city in Asiatic Turkey, containing about 120,000 souls. This flourishing seat of European commerce, and chief mart of the Levant trade, is said to have been founded by Alexander the Great †, eminently distinguished from all other conquerors by the foundation, and not the destruction, of cities. In the wars between the Turks and the Greeks Smyrna sunk into great decline; and was taken with vast slaughter by Timur in 1402. The excellence of the haven renders Smyrna the centre of all the traffic of Asia Minor; but the frequent visits of the pestilence greatly impede its prosperity [6].

In the month of March 1797, a dreadful insurrection arose in this city on account

[4] Ellis's Memoir, p. 57. [5] Russel's Aleppo, Browne, 384, &c.

* The Syriac is only used in the churches of the Maronites and one or two villages. See Browne.

† The more ancient city ſtood on the other side of the bay. My excellent and respected friend Mr. Laumond, counsellor of state, formerly consul at Smyrna, assures me that the population has been under-rated, being probably 160,000, of whom 40,000 are Turks.

[6] Chandler, 65.

of a Janissary, who was killed by a Sclavon, a subject of Venice. The Turks became furious, but not daring to attack the Franks, turned their rage against the Greeks in murders, rapes, and every act of atrocity. At length they set fire to the city, and it was with the utmost hazard that the French consul could protect the Europeans. At this instant an Aga arrived from Constantinople, and with great difficulty appeased the tumult, having condemned eighteen Turks to be put to death. The first Greeks found in the street were constrained to be the executioners, and among them was an old respectable merchant, who, performing his new office with much timidity and awkwardness, put his patient to some unnecessary pain. A Turkish officer, after reproaching the venerable Greek, struck him with his cane. The Aga in a rage exclaimed, "What, in my presence, and towards a man already unhappy by the meanness of his new office? Off with the head of that dog!" The Turkish officer was seized and instantly decapitated.

It has been observed, that the sands in the bay of Smyrna gradually increase, and may probably in time impede the commerce. Two magnificent basons, encircled by mountains crowned with villages and trees, form the harbour of Smyrna, where numerous vessels complete the enchanting prospect: but the earthquakes are terrible, and the pestilence frequent. It is a singular remark, that if the plague do not appear in the village of Bournabac before the agnus castus be in flower, it will not be felt for that season. The Greeks in general suffer greatly by the small pox, on account of their rigid fasts, and unwholesome diet. The Turks, when siezed with rheumatism, apply to the Franks for a cure by electricity, which they regard as magic, but call it art or science. The climate is however very healthy, and in 1798, there were twelve men aged upwards of eighty, all living in the same street. Cortazzi, formerly consul from Venice, was eighty-five years of age, and had had thirty-two children by one wife. He had kept a medicine by him for fifty-five years, never having had occasion to try its effects *.

Prusa is a beautiful city, in a romantic situation at the northern bottom of mount Olympus. By Tournefort's computation of families the inhabitants may be about 60,000. It is enlivened by numerous springs, which descend from the mountains, and by the proximity of the hot baths. Prusa was formerly the chosen residence of the sultans, and contains many of their tombs. It is now chiefly remarkable for the breed of silk worms, and manufactures of silk and cotton. Magnisi, or Magnesia, is also a city of some repute in this quarter of the empire, but the modern situation seems different from the ancient; and Kircagatch has risen to considerable population, from the cultivation of cotton, being about 40 miles to the N. E. of Magnisi, on the route to Prusa †.

ANGORA.] Angora may contain 80,000 inhabitants; and is a striking and agreeable city, in a lofty situation. The trade is chiefly in yarn, of which our shalloons are made; and in their own manufacture of Angora stuffs, made chiefly of the fine hair of a particular breed of goats, which, like that of the cats, occurs in no other

* Laumond's papers.

† Hunter's Travels, 1726, 8vo. p. 159. See also the map in Peyssonnel's journey from Smyrna to Sardes, and Thyatira, at the end of his Observations Historiques et Geographiques, &c. Paris, 1765, 4to. This journey is full of inscriptions and antiquities, like most of those to the Levant, and of course contains very little solid information. Voyages to the Levant, as they are called, are indeed of all others the most common, and the most vague and uninstructive. A few useless inscriptions, and a thousand quotations from the classics, or descriptions of Egypt and Syria, repeating what has been repeated a hundred times before, constitute what is called a voyage to the Levant. If an able traveller were to investigate the geography, natural history, and other topics of real importance in Asia Minor only, he would supply many deficiencies in modern knowledge.

country.

Vol. II. page 526.

country. Yet there seems no peculiarity in the air, situation, or soil, which is a fine red marl *.

TOKAT.] Tokat is also a flourishing place. The inhabitants are computed at 60,000. The situation is singular, amidst rugged and perpendicular rocks of marble; and the streets are paved, which is a rare circumstance in the Levant †. Silk and leather are manufactures of Tokat; but the chief is that of copper utensils, which are sent to Constantinople, and even to Egypt. The copper is from the mines of Gumiscana, at the distance of three days' journey from Trebisond; and from those of Castan Boul, yet richer, and situated ten days' journey from Tokat, on the west towards Angora [8].

BASRA.] Basra, or Bassora, on the estuary of the Euphrates, and Tigris, must be regarded as still subject to the Porte, though Persia will probably soon aim at the possession. It is attached to the Pashalic of Bagdad, and governed by a Mutselim sent from thence. It may be here briefly mentioned as a city of 40,000 inhabitants, but of great commercial consequence, being frequented by numerous vessels from Europe and Asia, and the seat of an English consul. Here the various products of Europe and India are exchanged for those of Persia; and opulent caravans proceed to the chief cities of Asiatic Turkey, to all which it is the most central port of the more oriental trade.

BAGDAD.] The great and romantic Bagdad, the seat of Califs, and the scene of many eastern fictions, has now dwindled into a town of about 80,000 inhabitants ‡. Not far to the south are some ruins of the celebrated Babylon, which have been ably illustrated in a recent work of Major Rennell [9].

Many an important city of antiquity has sunk into a village, and even the village often into a mass of rubbish, under the destructive domination of the Turks, perhaps the only people whose sole occupation has been to destroy. The maps are crowded with many names, now only known by miserable hamlets; and an enumeration which would seem short may yet be complete. The ancient and celebrated city of Jerusalem is reduced to a mean town, chiefly existing by the piety of pilgrims. Towards the frontiers of Persia the ravages of frequent war have spread additional destruction; yet Erzeron, the capital of Armenia, retains about 25,000 inhabitants. Kars, the extreme town upon the frontiers of Persia, is tolerably fortified; but is an inconsiderable place [10].

* Angora scarcely contains 40,000 inhabitants at present: this diminution is chiefly owing to the loss of their trade in mohair yarn, which was formerly in great demand in England and Holland. The manufacture of camlets and shalloons from this yarn also gave employment to a vast number of the inhabitants: till the introduction of shalloons from England reduced the consumption of those costly articles. Shalloons are not made of mohair, but of British wool; which render them so much cheaper and inferior to the Angora stuffs. The extraordinary quality of the hair of the goats, cats, and greyhounds of Angora, must certainly be attributed to some peculiarity in the air, soil, or water of the environs, since it is well known that they degenerate when removed to some distance thence. *Note communicated.*

† Angora, Smyrna, Constantinople, are all paved, as I learn from the oral information of Mr. Browne, whom I consulted on this part of my work.

[8] Tournefort, ii. 324. In modern times the copper mines are at Korek, Geban Madan, and Argana. From the information of Ismael Effendi, embassador from the Porte at London, formerly secretary to the mines.

‡ Mr. Parsons, (Travels,) says that previous to the plague of 1772, the city on both sides the river was computed to contain 500,000 inhabitants, but reduced by that calamity to 100,000. Mr. P.— was shewn the public register, by which it appeared that upwards of 300,000 bodies were carried out of the city to be buried in the space of four months. The number on the Persian side only, ascertained from their having been carried out at one gate, by public order was 211, 354. In 1798, Bagdad was supposed to contain 80,000 souls, of which 50,000 Arabs, 25,000 Turks, 1000 Curds, 1500 Christians, 2,000 Jews. *Note communicated.*

[9] Geography of Herodotus.

[10] Tournefort, ii. 217.

MANU-

MANUFACTURES.] The chief manufactures of Asiatic Turkey have been already incidentally mentioned in the preceding account of the cities; to which may be added the excellent carpets so frequent in England. These, with rhubarb, and several other drugs, may be regarded as the chief articles of commerce.

The Levant, or Turkey, trade was formerly of great consequence to Great Britain; but since the middle of last century has been more advantageous to France. Sir James Porter, formerly ambassador at Constantinople, has published several important observations on this subject [11]. He remarks that many of the stems of our nobility sprung from this great root of opulence; for in former times the Turkey merchants were the most rich and respectable body of men in the city. The capitulations of this commerce, so called because they were mere concessions granted by the Porte, date from the reign of Elizabeth. Though the charter was granted to a company there was no common stock; but each individual traded in his own way, and upon his own fund. There was a code of regulations: the ships were sent annually: and no bullion was allowed to be remitted to Turkey. The decline of this trade appears, from the account of this author, to have arisen from several injudicious bills brought into parliament, which from their severity induced the merchants to export cloth of an inferior quality. Yet as he confesses that the trade had declined, before the statutes had passed, it seems reasonable to infer, that the avarice of some traders was the real cause of the inferiority of our articles to those of the French, who artfully availed themselves of the opportunity, and by strict regulations maintained their superiority. In the period from 1729 to 1738 the English cloth sent to Constantinople amounted annually to 574 bales; while from 1739 to 1748 it had fallen to 236 bales. For the nature and causes of the decline of our Turkey trade, and the ascendancy of that of the French, the reader, who wishes for minute information, must be referred to the same judicious traveller.

From most respectable authority, some additional information concerning the Levant trade chiefly carried on at Smyrna, shall here be laid before the reader.

France sends coffee, sugar, indigo, cloths, and cochineal.
England, shalloons, muslins, iron, tin, spices, refined sugars.
Holland, muslins, India goods, cloths, spices.
Austria, from Trieste, cloths, glass, hardware, linen, wood, amber.
Russia, iron, corn, caviar, dried fish, furs.
Italy, silks and velvets, wax and paper.
European Turkey, wines, silks, tobacco.
Natolia and Syria, woollens, cottons, silks, drugs.
Egypt, coffee of Yemen, rice.
Barbary, dates, woollen caps from Tunis, butter, wax.

The port of Marseilles which carries on the French trade with Smyrna, draws the wool and cochineal from Spain, but this country has lately begun to conduct her own commerce. Venice, under the Austrian power, might become the chief port of the Levant business. Of the French commerce the chief staple is coffee. It was neglected under the monarchy on account of the intrigues of women and quarrels of priests, nor can it resume much vigour until France shall attain a greater naval power.

Upon the whole, if the commerce of Smyrna be at present valued at fifty millions of franks, the Engliſh trade for thirty millions, the Dutch for ten, while France shares the remaining ten millions with the emperor, Italy, and other states above enumerated.

[11] Observations on the Turks, 1771, 8vo. p. 361.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes. — Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

CLIMATE AND SEASONS.] THE climate of Asia Minor has always been considered as excellent. There is a peculiar softness and serenity in the air, not perceivable on the European side of the Archipelago. The heat of the summer is considerably tempered by the numerous chains of high mountains, some of which are said to be covered with perpetual snow.

FACE OF THE COUNTRY, &c.] The general appearance of Asiatic Turkey may be regarded as mountainous; but intermingled with large and beautiful plains, which, instead of being covered with rich crops of grain, are pastured by the numerous flocks and herds of the Turcomans. The soil, as may be expected, is extremely various; but that of Asia Minor is chiefly a deep clay; and wheat, barley, and durra, form the chief, if not the only products of agriculture [1]. But excellent grapes and olives abound; and the southern provinces are fertile in dates. In Syria the agriculture is in the most deplorable condition; and the instruments, and management are alike execrable. The peasants are in the most miserable situation; and though not sold with the soil, like those of Poland, are, if possible, yet more oppressed; barley bread, onions, and water constituting their constant fare [2].

RIVERS,] The principal river of Asiatic Turkey is, beyond all comparison, the Euphrates, which rises from the mountains of Armenia, a few miles to the N. E. of Erzeron [3]; and chiefly pursues a S. W. direction to Semisat, where it would fall into the Mediterranean, if not prevented by a high range of mountains. In this part of its course the Euphrates is joined by the Morad from the east, a stream almost doubling in length that of Euphrates; so that the latter river might more justly be said to spring from mount Ararat, about 160 British miles to the east of the imputed source. At Semisat, the ancient Samosata, this noble river assumes a southerly direction; then runs an extensive course to the S. E., and after receiving the Tigris, falls by two or three mouths into the gulph of Persia. The comparative course of the Euphrates may be estimated at about 1400 British miles.

TIGRIS.] Next in importance is the Tigris, which rises to the north of Medan, about 150 miles south from the sources of the Euphrates, and pursues nearly a regular direction S. E. till it join the Euphrates below Korna, about 60 miles to the north of Bassora; after a comparative course of about 800 miles. The Euphrates, and the Tigris, are both navigable for a considerable distance from the sea.

KIZIL IRMAK, &c.] The third river in Asiatic Turkey is that called by the Turks Kizil Irmak, the celebrated Halys of antiquity; rising in mount Taurus not far from Erekli, but by other accounts more to the east, and, pursuing a winding course to the

[1] Browne, 418. [2] Volney, ii. 413. [3] Tournefort ii. 198.

north, nearly across the whole of Asia Minor, til it join the Euxine sea on the west of the gulph of Sansoun. The river Sacaria, the ancient Sangarius, or Sangaris, rises about 50 miles to the south of Angora, and running to the N. W. joins the Euxine, about 70 miles to the east of Constantinople.

In the next rank may be placed the classical river of Mæander, rising to the north of the ancient city of Apamia, and running, in a winding stream, about 250 British miles. Dr. Chandler has observed that Wheler, otherwise a most accurate and intelligent traveller, has mistaken a tributary stream for the real Mæander*; which is called by the Turks Boyuc Minder, or the great Mæander, to distinguish it from this little stream, which resembles it in mazes. The Minder, not far from its mouth, is about 100 feet broad; with a swift, muddy, and extremely deep current, having received a considerable accession of waters from the lake of Myus.

The Sarabat, or ancient Hermus, renowned for its golden sands, joins the Archipelago about 90 British miles to the north of the Minder, after a course of similar length.

The other rivers of Asia Minor are far more inconsiderable, though many of them be celebrated in classical history and poetry.

The chief river of Syria is the Orontes, now called Oron or Asi, rising about 12 miles to the N. of Damascus, and running nearly due north till it suddenly turns E. near Antioch, after which it soon joins the Mediterranean.

Lakes.] Asiatic Turkey also contains numerous lakes. That of Van in the north of Kurdistan, is the most remarkable, being about 80 British miles in length from N. E. to S. W., and about 40 in breadth: it is said to abound with fish. This great lake, with that of Urmiah in Persia, about 100 miles to the S. E., appears to have been little noted in ancient geography; and D'Anville does not seem to have considered the difficulty though the lake of Van may be the Thospitis of antiquity; but his maps and disquisitions are open to many improvements from recent accounts†.

In Syria what is called the Dead Sea may be regarded as a lake of about 50 miles in length, and 12 or 13 in breadth. The lake of Rackama, to the south of Hilla and the ancient Babylon, is about 30 miles in length, and flows into the Euphrates.

Towards the centre of Asia Minor there is a remarkable saline lake, about 70 miles in length and a mile or two in breadth, being the Tatta or Palus Salsa of D'Anville's ancient geography‡.

Numerous other small lakes appear in Natolia, among which may be particularly mentioned that of Ulubad, anciently styled the lake of Apollonia, which according to Tournefort is about 25 miles in circumference, and in some places seven or eight miles wide, sprinkled with several isles and some peninsulas, being a grand receptacle of the waters from mount Olympus *. The largest isle is about three miles in circuit, and is called Abouillona, probably from the ancient name of the city which stood on it. About 50 miles to the N. E. was the lake called Ascanius by the ancients, now that of Isnik.

Mountains.] Many of the mountains of Asiatic Turkey deserve particular attention, from their ancient celebrity. The first rank is due to the Taurian chain of antiquity, which was considered as extending from the neighbourhood of the Archipelago

* This little stream, whose windings rival those of the river, flows due south, and joins the Mæander near its mouth, after a course of about 40 British miles.

† From Ptolemy it may be concluded that the lake of Urmiah is the Arsissa of antiquity: but when he derives the Tigris from the lake Thospitis he probably means the small lake of Gurgick, near the real source of the Tigris.

‡ It seems to repose on rock-salt, and is greatly frequented for that article. The modern name is *Tousla*, or the Salt Lake. Mr. Browne's inf.

* ii. 363

to the sources of the Ganges, and the extremities of Asia, so far as discovered by the ancients. But this notion little accords with the descriptions of modern travellers, or the researches of recent geography; and we might perhaps with equal justice infer that the Carpathian mountains, the Alps and the Pyrenees constitute one chain. Science is equally impeded by joining what ought to be divided, as by dividing what ought to be joined. The Caucasian mountains have been well delineated by the Russian travellers, as forming a range from the mouth of the river Cuban, in the N. W., to where the river Kur enters the Caspian, in the S. E. The remaining intelligence is dubious and defective; but it would seem that, in resemblance of the Pyrenees, a chain extends from Caucasus S.W. to near the bay of Scanderoon. This ridge seems the Anti Taurus of antiquity: but various parts of it were known by different names, as marked in D'Anville's map of Asia Minor. At the other extremity of the Caucasus other chains branch out into Persia, which they pervade from N. W. to S. E., but they may all be justly considered as terminating in the deserts of the south eastern part of Persia; or as having so imperfect a connexion with the mountains of Hindoo Koh, which supply the western sources of the Indus, that it would be mere theory to regard them as a continued chain.

Far less can they be regarded as an extension of Mount Taurus, which, on the contrary, terminates at the Euphrates and desarts of Algezira. Of this the ancients were aware; and in their fondness for the Taurus represented it as winding like an immense snake, by the Anti Taurus to the Caucasus, thus including the latter in the Taurian chain. Such ideas would only introduce confusion into geography; and modern precision will be contented to observe that the chain of Taurus, now called Kurun, perhaps from the old Greek name Ceraunus, extends for about 600 miles E. and W. from the Euphrates to near the shores of the Archipelago. A recent traveller found the ascent and descent, between Aintab and Bostan, to occupy three days; and the heights abound with cedars, savines, and junipers. It is probable that these and the other mountains of Asiatic Turkey are calcareous; while the Caucasus alone aspires to the rank of a granitic or primitive chain.

Towards the east of Armenia is Ararat, of which we have a description by Tournefort [5]; and from his account it seems chiefly to consist of free-stone or calcareous sandstone. It is a detached mountain, with two summits; the highest being covered with eternal snow. In one of the flanks is an abyss, or precipice, of prodigious depth, he sides being perpendicular, and of a rough black appearance, as if tinged with smoke. This mountain belongs to Persia, but is here mentioned on account of connexion.

Beyond Ararat are branches of the Caucasian chain; to which, as is probable, belong the mountains of Elwend, which seem to be the Niphates of antiquity.

In Syria the most celebrated mountain is that of Lebanon, or Libanus, running in the southerly and northerly direction of the Mediterranean shore, and generally at the distance of about 30 or 40 miles, The Anti Libanus is a short detached chain, running nearly parallel on the east. These mountains are of considerable height, the summits being often covered with snow; and they seem to be calcareous, the granite not appeartng till the neighbourhood of Mount Sinai and the Arabian gulph. The chief heights are between Balbec and Damascus.

The eastern side of the Archipelago presents many mountains of great height and classical fame; chiefly in ranges extending from N. to S. Of these Olympus (now Keshish Dag) is one of the most celebrated, and is described by Tournefort as a vast range long covered with snow. He says that a day's journey would be required to visit the summit of the mountain; and adds that it is one of the highest in Asia. Many small streams spring from Olympus, and the large lake of Ullabad is another receptacle of its waters.

[5] ii. 267, &c.

About 140 miles to the west of Olympus, rises mount Ida, of great though not equal height. The summit of Ida was by the ancients called Garganus; from which extend western prominences reaching to the Hellespont, and amidst them stood the celebrated city of Troy: Garganus, or the summit of Ida, being about 30 miles from the shore; and giving source to the Granicus, the Simois, and other noted streams, most of which run to the north.

Other remarkable mountains on this classical shore were those of Rhea, at an equal distance between Ida and Olympus. Mount Pedasus seems merely the southern extremity of Rhea. Farther to the south the mountains may perhaps be considered as branching from the Taurus, such as the range which passes from the head of the Mæander, and forms the promontory opposite to Scio, known in different districts by the ancient names of Messogis, Tmolus, Sipylus, Corycus, and Mimas, while another branch passes along the shore to the mouth of the Mæander, presenting the heights of Corax, Gallesus, and Mycale, the last opposite to Samos.

To the south of the Minder, or Mæander, the Taurus detaches a chain, called Cadmus and Grius, bending towards the isle of Cos and the Cyclades.

These numerous mountains in Asiatic Turkey are often clothed with immense forests of pines, oaks, beeches, elms, and other trees. The southern shores of the Black Sea also present many gloomy forests of great extent. This abundance of timber supplies the inhabitants with fuel; nor has pit coal been explored in any part of Asiatic Turkey. Sometimes conflagrations arise, from the heedless waste of the caravans, who, instead of cutting off a few branches, will set fire to a standing tree.

Botany.] The extensive provinces of Natolia, Syria, and Mesopotamia, since their reduction under the Turkish yoke, have been but little accessible to European curiosity. The natural productions of Syria, however, have been investigated, though imperfectly, by several naturalists of eminence, while the mountains and rich vales of Natolia towards the great Caucasian chain are almost wholly unknown. These countries having been inhabited and civilized from the remotest antiquity, possessing for the most part a dry rocky soil, with fewer rivers than any tract in Europe of equal extent, contain none of those low swampy levels that form so characteristic a feature in almost all the American countries, that compose the greater part of Holland, and occupy no small proportion of Hungary, and the dominions north of the Baltic. Those vegetables therefore that inhabit swamps, lakes, and bogs, will be very sparingly found in the flora of Asiatic Turkey; nor will the indigenous alpine plants be more numerous; not indeed on account of the absence of high mountains, but from their having been hitherto almost entirely unexamined. Of the scanty catalogue of plants that have been found wild in the Asiatic part of the Ottoman territory, the following are the most worthy of notice*:

Among the trees may be distinguished, the olive tree, abounding throughout the whole Archipelago and the shores of the Levant; the weeping willow, graceful with its slender pendant branches, which has adorned the banks of the Euphrates from time immemorial; elæagnus angustifolius, *wild olive*, bearing a small sweet esculent fruit; the white mulberry; cercis siliquastrum, remarkable for its long seed-pods; zygophyllum fabago, *berry-bearing tea;* melia azedarach, the *bead tree;* storax tree, from which exudes the fragrant gum resin of the same name; pomegranate; almond tree, and peach tree; cherry, a native of Pontus in Natolia, whence it was brought to Rome by Lucullus; the lemon and orange; laburnum, and myrtle, growing plentifully by the side of running streams; the vine, in a perfectly wild state, climbing up the highest trees, and forming verdant grottos among its ample festoons; the mastich,

* La Billardiere Icones plantarum Syriæ. Gronovius Flora Orientalis,

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chio turpentine, and pistachia nut tree; carob; juniperus drupacea and oxycedrus, two of the largest species of this genus nearly equalling the cypress in height, and found upon Mount Cassius and other rocky hills in Syria; the cypress; and cedar, a few large trees of which still remain on Mount Lebanon, the venerable relics of its sacred forests. Hibiscus Syriacus, distinguished by the uncommon splendour of its blossoms, and on this account much cultivated about Constantinople and other parts of the Turkish empire, where it does not grow spontaneously; the fig tree; and sycamore fig, abounding in Palestine and other parts of Syria; the date tree; the prickly cupped oak, from which are procured the finest Aleppo galls; the oriental plane tree, highly esteemed for its shady tent-like canopy of foliage. Mimosa arborea; and menispermum cocculus, the berries of which, commonly called cocculus indicus, are much used by the natives for taking fish, on account of their narcotic qualities.

Of the lower trees and flowering shrubs the principal are lilac, abounding on the banks of the Euphrates; yellow and common jasmine, found plentifully in the thickets and woods of Syria; the long hollow stems of the latter of these are in great request among the inhabitants, as stems to their tobacco pipes; ruta fruticulosa and linifolia, two species of *rue*, the former of which is rather uncommon, and has been chiefly found about Damascus; arbutus unedo, *arbute;* prunus prostrata, a trailing shrub, the smallest of the *plum* kind, covering the rocks near the summit of Mount Lebanon; Spanish and thorny broom, occupying many of the sandy tracts that are of such frequent occurrence in Syria; oleander, a common ornament of every rivulet; tamarisk; rhus cotinus; lycium europæum, *boxthorn;* osyris alba, *poet's cassia;* erica scoparia, with many other kinds of *heath;* baytree; caper bush; several species of cistus, especially the *sage-leaved* and *gum cistus;* and euphorbia mauritanica, *mauritanian spurge*, with the acrid juice of which the scammony is not unfrequently adulterated.

Several dying drugs and articles of the materia medica are imported from the Levant, among which may be particularized the madder; a variety of this, called alizari, is largely cultivated around Smyrna, which yields a much finer red dye than the European kind, and to this the superiority of the Greek and Turkish reds is principally to be ascribed; smilax aspera; mirabilis jalapa, *jalap*; convolvulus scammonia, *scammony;* cordia myxa, *sebesten;* croton tinctorium: ricinus communis, the seed of which yields by expression the *castor oil;* momordica elaterium, *squirting cucumber;* cucumis colocynthis, *coloquintida;* papaver somniferum, *opium poppy*; sesamum orientale; and costus arabicus, *spikenard.*

A few esculent plants not commonly made use of elsewhere are the produce of Natolia and Syria, such as solanum melongena, *mad-apple;* cyperus esculentus, the large aromatic root of which is much esteemed; corchorus olitorius, *Jews' mallow;* arum colocasia, remarkable for its sweet farinaceous root, while those of its kindred species are intolerably acrid.

The following vegetables are remarkable either for their beauty or singularity: exoacantha heterophylla, an unbelliferous plant distinguished by its uncommonly thorny involucrum, found in the vicinity of Nazareth; dianthus Libanotis, *Lebanon pink;* anthyllis tragacanthoides, a rare plant found on Lebanon, and eminently beautiful with its long clusters of purple papillonaceous flowers; amaryllis montana, also a native of Lebanon; branched asphodel; white and orange lily; narcissus tazetta; star of Bethlehem; oriental hyacinth; xeranthemum frigidum, a beautiful plant growing close to the snow on Mount Lebanon; golden henbane; winter cherry; atropa mandragora; calla orientalis; arum intortum; cretan origany; rose of Jericho.

Zoology.] The best horses in Asiatic Turkey are of Arabian extract, and are sparingly

sparingly fed with a little barley aad minced straw, to accustom them to abstinence and fatigue; but mules and asses are in more general use. Concerning the breed of cattle little is mentioned by travellers, but it seems inferior to those of Europe; and beef is scarce and bad. The mutton is superior; and the kid is a favourite repast*.

In Asiatic Turkey appears that king of ferocious animals called the lion, which is unknown to any region of Europe, and even to Asiatic Russia. Yet he rarely roams to the west of the Euphrates: but Tournefort observed many tigers on Mount Ararat. He must mean the small tiger, or perhaps the leopard or the mountain cat; for the royal or large tiger seems to be restricted to the wastes of Hindostan. The hyæna, and the wild boar, are known animals of Asia Minor; and the jackall ranges in troops, which raise dreadful cries in the night, but the fable of their accompanying the lion is justly exploded. The cities and villages swarm with dogs, who are allowed to wander, as a constant defence against strangers or enemies.

The ibex, or rock goat, appears on the summits of Caucasus. The singular goats and cats of Angora have been already mentioned. The gazel, a kind of antelope, is also an inhabitant of Asia Minor; with numerous deer and hares. The partridges are generally of the red-legged kind, about a third larger than the common European.

Of fish there are numerous names, and many of them are excellent. The difficulties of travelling have considerably abridged our knowledge of the zoology of these various regions, Hasselquist, the disciple of Linnæus, having passed from Smyrna to Alexandria, and chiefly occupied himself in the natural history of Palestine and Egypt.

Mineralogy.] The mineralogy of those extensive and mountainous provinces remains in a deplorable state of imperfection. Ancient Lydia was famous for the production of gold; but in modern times no mines seem to be indicated, except those of copper which supply Tokat. The indolence of the Turks, or indeed their industry in destruction, is alike inimical to metallurgy and agriculture. Hasselquist observed lead and copper ore, with rock crystals, in the island of Cyprus. But his account of oriental minerals only contains whetstone and natron, both Egyptian; and he informs us that Moses must have inscribed the laws on granite, which constitutes Mount Oreb and Mount Sinai[6]. The mountains of Judæa, he says, are of a very hard limestone of a yellowish white; and towards the east of a loose grey limestone. If such be the profound observations of a naturalist, what is to be expected from other travellers?

Mineral Waters.] The most noted mineral waters are those of Prusa, at the bottom of mount Olympus. The baths are splendid, and paved with marble, with two reservoirs or rather cisterns for bathing, one for the men, another for the women. The water smokes continually, and is so hot as to scald the hand; but in the baths it is mingled with cold water from the numerous streams of Olympus. There are many other hot springs in different quarters of Natolia.

Natural Curiosities.] The natural curiosities, and singular features, of so mountainous a country, must be numerous; but as such seldom occur in the beaten tracks, and there is no safety in visiting distant recesses, the chosen haunts of banditti, it is no wonder that this topic is left barren by travellers. The beautiful mazes of the Minder have been celebrated from early antiquity; and it is probable that the large salt lake, in the centre of Asia Minor, might afford a curious object of investigation.

* Hasselquist, p. 192, says, that the sheep of Anti Libanus have sometimes a crust on their teeth, with the perfect appearance of a yellow pyrites. It is imputed to the grass or lucern.

[6] P. 292. When the author of this work was at Paris, M. Roziere, an able mineralogist who accompanied, with Dolomieu, the French expedition to Egypt, presented to him specimens of Mount Sinai and Arabia Petræa. The granites are sometimes peculiar, and mixed with a green substance resembling smaragdite. The stone on which, according to the monks, the laws of Moses were written,, is a beautiful white felspar with black hornblende. The others are grunstein, serpentine, &c.

Dr.

Vol. II. page 25.

Dr. Chandler[1] describes the singular cliff near Pambouk or Hierapolis, produced by the hot petrifying waters, and resembling an immense frozen cascade, as if the water had been fixed and suddenly converted to stone. In the same vicinity is a cave remarkable for pernicious effluvia.

ISLANDS BELONGING TO ASIATIC TURKEY.

ISLANDS.] The chief islands in the Archipelago, considered as belonging to Asia, are Mytilene, Scio, Samos, Cos, and Rhodes.

MYTILENE.] Mytilene, the ancient Lesbos, is the most northerly and largest of these isles, being about 40 British miles in length by 24 at its greatest breadth. The mountainous appearance of this isle is agreeably diversified with bays and inlets of the sea, and plantations of olives, vines, and myrtle[1]. There are hot baths issuing from cliffs resembling those of St. Vincent near Bristol, and which indicate the isle to be chiefly calcareous. The climate is exquisite; and it was anciently noted for wines, and the beauty of the women.

SCIO.] Scio, the ancient Chios, is about 36 British miles in length, but only about 13 in medial breadth. The Chian wine is celebrated by Horace, and retains its ancient fame. The town of Scio on the east side of the isle, is handsome and convenient. The Greeks here enjoy considerable freedom and ease; and display such industry that the country resembles a garden. This particular favour arises from the cultivation of the mastic trees, or rather shrubs, for they are small evergreens which supply the gum, so acceptable to the ladies of the sultan's haram, or, as we term it, the seraglio. The beauty of the women is confined to one form of features, as in the Grecian statues; and even the clearness of their complexion cannot atone for the preposterous form of their dress, which is here, if possible, more ridiculous than in the other Egean isles. Pococke's figure of Homer, which he pretends to have found here, is imaginary; and the original seems to be an image of Cybele. This isle is also very mountainous. The earth of Scio was celebrated by the ancients, but was only a common bole like that of Lemnos. Tournefort observed here tame partridges, kept like poultry; and it is probable the custom is retained, for among the Turks every thing is stationary, except destruction. Chandler saw numerous groves of lemons, oranges, and citrons, perfuming the air with the odour of their blossoms, and delighting the eye with their golden fruit. The Genoese possessed this beautiful isle about 240 years, but lost it in 1566. Opposite to Scio, on the Asiatic shore, is Chesme, where the Turkish fleet was destroyed by the Russian, 1770. The inhabitants of Scio are supposed to be about 60,000[2].

SAMOS.] Samos is about 30 miles in length, and 10 in breadth. This isle is also crossed by a chain of hills, and the most agreeable part is the plain of Cora. Tournefort computes the inhabitants at 12,000, all Greeks; with a Turkish Aga or military officer, and a cadi or judge, magistrates usual in every Turkish district. The women are celebrated for their complete want of beauty, thus forming a remarkable exception to the other Greek isles. The pottery of Samos was anciently excellent; at present most branches of industry are neglected; but nitre, emery, and iron, might still be worked. Pitch is prepared from the pine trees in the north part of the island; and the silk, honey, and wax, are esteemed. Most of the mountains are of white marble, and swarm with game of various descriptions. The best haven is that of Vati to the N. W. Some remains are observed of the celebrated temple of Juno[3].

[1] P. 230. [1] Dallaway's Constantinople, p. 313.
[2] Tournefort, p. 281. Van Egmont, i. 237, &c. Chandler, 48.
[3] Tournefort, i. 307. Dallaway, 251.

Cos.

Cos.—Rhodes.] Cos is about 24 miles in length, by three or four in breadth; but has been little visited by modern travellers. Pliny styles Cos a most noble isle; and from it was first derived the name and substance of the whetstone. It is now covered with groves of lemon trees, and there is an oriental plane tree of vast size. The chief trade is in oranges and lemons; and Cos is the residence of a Turkish pasha[4]. Rhodes is about36 British miles in length, by 15 in breadth, an island celebrated in ancient and modern times. It is fertile in wheat, though the soil be of a sandy nature. The population is computed at about 30,000. The city of the same name, in which no Christian was formerly permitted to dwell, stands in the north end of the isle; and was anciently noted for a colossus in bronze, about 130 feet high, which could not have stood over the harbour as fabled, for it was soon cast down by an earthquake, and the fragments many centuries afterwards were sold by the Saracens; while if it had stood over the port it must have fallen into the sea[5]. This isle was for two centuries possessed by the knights of St. John of Jerusalem, thence styled of Rhodes, till 1523, when it was taken by the Turks; and the emperor Charles V. assigned to the knights the island of Malta[6].

Cyprus.] Along the southern shore of Asia Minor there are some small isles, among which is that of Castel Rosso, S. E. of Patira. But they are of no moment, when compared with the large and celebrated island of Cyprus, which is about 160 British miles in length, and about 70 at its greatest breadth. It was long possessed by the Ptolemies of Egypt, till it fell under the Roman power; when it remained a portion of the Byzantine empire, till it was usurped by a Greek prince, who was expelled by Richard I. of England. This monarch bestowed the kingdom of Cyprus on the house of Lusignan, as a compensation for the loss of the throne of Jerusalem. In the fifteenth century the heiress of the house of Lusignan resigned this isle to the Venetians; but in 1570 it was seized by the Turks. The soil is fertile, yet agriculture in a neglected state. The oxen are lean and of a small size: the sheep are of a better description. The chief products are silk, cotton, wines, turpentine, and timber. The wine of Cyprus is deservedly celebrated. The oranges are excellent; and the mountains are covered with hyacinths and anemonies, and other beautiful flowers. Cyprus is supposed to have derived its name from the abundance of copper ore; and it is said to have anciently produced gold, silver and emeralds. What is called the Paphian diamond is a rock crystal, found near Paphos; and there is a quarry of amianthus, while several hills consist chiefly of talc. The other mineral productions are red jasper, agates, green earth, and umber. The Cypriots are a tall and elegant race; but the chief beauty of the women consists in their sparkling eyes. To the disgrace of the Turkish government the population of this extensive island is computed at 50,000 souls*! Cyprus is pervaded by a chain of mountains, among which is a third *Olympus*, some primitive name, which seems to have been general for a mountain of great height. Van Egmont says that there is not one river in the island, he means that continues its course in the summer†; but that there are many ponds, lakes and fens, producing a damp and malignant air. The chief cities are Nicosia, the capital and residence of the governor, and Famagusta[7].

[4] Van Egmont, i. 262.

[5] Gibbon, ix. 425.

[6] Van Egmont, i. 268, who gives a long description of Rhodes.

*Mr. Browne rather conjectures 100,000. The Christians in Cyprus are however more exposed than any others to the Turkish oppression, and emigrate to Syria in great numbers.

† It is said however that the river Piscopia flows, and even drives grist-mills through the year.

[7] Van Egmont, i. 281. Mariti, &c.

RUSSIAN EMPIRE IN ASIA.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs, and Antiquities.

EXTENT.] THIS large portion of the habitable globe extends almost the whole length of Asia, from about the 37th degree of longitude east of London to more than 190°; or 170 of western longtude. As the northern latitude is very high, the degree shall only be assumed at 30 miles; and the length may thus be computed at 4590 geographical miles. The greatest breadth from the Cape of Cevero Vostochnoi, called in some maps Taimura, to the Altaian chain of mountains on the south of the sea of Baikal, may be 28°, or 1680 geographical miles. In British miles the length may be roughly computed at 5350; and the breadth at 1960: an extent which will be found to exceed that of Europe*.

BOUNDARIES.] The furthest eastern boundary is that of Asia, and the seas of Kamchatka and Ochotsk; while the northern is the Arctic Ocean. On the west the frontiers correspond with those between Asia and Europe. The southern limits require more explanation. The river Cuban, part of the Caucasian chain, an ideal line, divide the Russian territory from Turkey and Persia. The boundary then ascends along the north of the Caspian through the stepp or desart of Issim, and the eastern shore of the river Ob, to where it issues from the Altaian mountains, when it meets the vast empire of China; and proceeds among that chain to the sources of the Onon, where it includes a considerable region called Daouria, extending about 200 miles in breadth, to the south of the mountains called Yablonnoy; the limit between Russia and Chinese Tatary being partly an ideal line, and partly the river Argoon, which joined with the Onon constitutes the great river Amur. Thence the boundary returns to the mountainous chain, and follows a branch of it to a promontory on the north of the mouth of the Amur.

ORIGINAL POPULATION.] The population of Asiatic Russia may be regarded as wholly primitive, except a few Russian colonies recently planted, and the Techuks in the part opposite to America, who have been supposed to have proceeded from that continent, as already mentioned, because their persons and customs are different from

* Mr. Tooke, in his View of the Russian Empire, computes the whole, including the European part, at 9,200 English miles in length, and 2,400 in breadth.

those of the other Asiatic tribes. Next to the Techuks, in the furthest north, are the Yukagirs, a branch of the Yakuts *, and yet further west the Samoieds. To the south of the Techuks are the Coriacks, a branch of the same race; and yet further south the Kamchadals, a distinct people, who speak a different language. The Lamuts are a part of the Mandshurs or Tunguses, who have been vaguely called Tartars or Tatars, though they neither belong to that race nor to the Monguls. The Tunguses are widely diffused between the Yenisei and the Amur: and the southern tribes, ruled by a khan or monarch, conquered China in the seventeenth century. The Ostiaks, and other tribes of Samoieds, have penetrated considerably to the south between the Yenisei and the Irtish, and are followed by various tribes of the Monguls, as the Calmucs, Burats, &c., and by those of the Tatars or Huns as the Teluts, Kirguses, and others. The radically distinct languages amount to seven, independent of many dialects and mixtures †.

NAMES.] The vast extent of northern Asia was first known by the name of Sibir or Siberia; but this appellation seems gradually to pass into disuse. When the Monguls established a kingdom in these northern regions, the first residence of the princes was on the river Tura, on the spot where now stands the town of Tiumen, about 180 miles S. W. of Tobolsk [1]. But the khans afterwards moved to the eastern shore of the Irtish, where they founded the city of Isker near Tobolsk. This new residence was also called Sibir, from what etymon or cause is not explained; and the name of the city passed to the Mongul principality ‡. When the Russians began the conquest of the country, being unconscious of its extent, the name of this western province was gradually diffused over half of Asia.

PROGRESSIVE GEOGRAPHY.] The progressive geography of this vast part of Asia commences at a recent period; nor was it disclosed to the attention of civilized Europe till the middle of the sixteenth century. It is indeed a singular circumstance in human affairs, that America may be said to have been discovered before Asia, though it be natural to suppose that the latter would have engaged a more deep and immediate interest, because the barbarous swarms in the extremity of Asia had repeatedly astonished and almost subjugated Europe. It has already been mentioned that in 1242 the Monguls under Sheibani established a principality in the western part of Siberia, around Tobolsk, and the river Tura, whence this principality was sometimes styled that of Turan §. The history of this distant principality is obscure, and lost in the superior splendour of the other Mongul dynasties.

In the reign of Ivan Vasilivitch, the first of both these names, and by his conquest over the Tatars the founder of Russian greatness, some incursions were made as far as the river Ob, and some Mongul chiefs were brought prisoners to Moscow [2]. But more than half a century elapsed before the real conquest of Siberia commenced in the reign of Ivan Vasilivitch II. who ascended the Russian throne in 1534. Trogonaff, a Russian merchant of Archangel, having opened a traffic for Siberian furs, the tzar was induced to attempt the conquest of the country which supplied them; and in 1558

* The Yakuts are expelled Tatars from the south, as the Russian writers decide from their language, traditions, and manners. The far greater part of the Monguls and Mandshurs are subject to China: and the Tatars are best observed in Independent Tatary.

† See the Hist. des Decouvertes Russes, &c. Berne, 1779. 1787, 6 vols. 8vo., being an abstract of the travels of Pallas, Gmelin, Ghiorghi, &c.

[1] Tooke's Russia, ii. 60.

‡ This is doubtful, Coxe, 182. Muller thinks the denomination was used by the Permians, a Finnish nation on the confines of Siberia; but Pallas, iii. 491, says that the ruins of *Sibir* are still visible 23 versts from Tobolsk, and that it gave name to the rivulet Sibirka, and all Siberia.

§ This must not be confounded with the Touran (or Tatary) of the Persians.

[2] Coxe's Russ. Dis. p. 177.

had

had added to his titles that of lord of Sibir or Siberia. Yermac, a Cossac chief, being forced by the Russian conquests in the south to take refuge near the river Kama with 6000 of his followers, he afterwards directed his arms against Kutchum the Mongul khan of Sibir, whom he defeated and expelled; but perceiving that his power was precarious, in 1582 he claimed and obtained the protection of Russia. Yermac soon after perished, and the Russians retreated: but towards the beginning of the seventeenth century they had firm establishments, and one Cyprian was appointed first archbishop of Sibir in 1621, residing at Tobolsk, where he drew up a narrative of the conquest. Towards the middle of the seventeenth century the Russians had extended as far east as the river Amur; but Kamchatka was not finally reduced till the year 1711. Bering and other navigators afterwards proceeded to discover the other extreme parts of Asia. In his first Voyage of 1728 Bering coasted the eastern shore of Siberia as high as latitude 67° 18′, but his important discoveries were made during his voyage of 1741. The Aleutian isles were visited in 1745; and in the reign of the late empress other important discoveries followed, which were completed by those of Cook.

In the south the Mongul kingdom of Cazan having been subdued in 1552, and that of Astracan in 1554, and the Russian monarchy extended to the Caspian sea, a considerable accession was added to the progressive geography by the chart of that sea drawn by command of Peter the Great. It hence appeared that all geographers, ancient and modern, had mistaken the very form of the Caspian, which extends greatly from north to south instead of spreading from east to west as formerly delineated. In the reign of the late empress many important additions were made to the progressive geography by Pallas and other scientific travellers, and a Russian atlas was published, which may be regarded as nearly complete.

Historical Epochs.] The Russian power in Asia is of such recent origin, that it affords few historical epochs except those which have been already mentioned in the progressive geography. The history of Capschak, or the kingdom of Astracan* before and after the conquest of the Monguls is obscure and uninteresting; nor can that of Cazan or Kazan, a more northern and barbarous state, claim superior attention. The city of Kazan was built in 1257, and became the capital of a small independent Mongul principality, partly in Europe and partly in Asia, A. D. 1441. The Russians assert that they possessed Astracan before the invasion of the Monguls in the thirteenth century: but while even this is doubtful, other parts of the history of Asiatic Russia cannot be supposed to be very clear†. The acquisitions on the frontiers of Turkey and Persia are recent and well known events.

As the Russian empire in Asia borders for a great extent upon Chinese Tatary, or rather the Monguls and Mandshurs, who acknowledge the protection and supremacy of China, it may be proper here to commemorate a few events which have arisen from this proximity. It has already been observed that about the middle of the seventeenth century the Russians had advanced to the River Amur; here they subdued some Tungusian tribes, and built some small fortresses. The Chinese monarch Camhi having formed a similar design, the two great powers unavoidably clashed; open hostilities commenced about 1680, and the Chinese destroyed the Russian forts. In August 1689 the treaty of Nershinsk, so called from the town in Daouria, was signed by the

* Capschak once spread through the whole Mongul conquests in Muscovy, including the Crimea, Astracan, Cazan, and Kipzak on the N. of the Caspian.

† The curious genealogical history of the Tatars by Abulgasi Chan gives little information concerning the northern dynasties. The manuscript was brought from Siberia by Baron Strahlenberg, one of the Swedish prisoners, and the French translation, published 1726, is said to be by one De Verannes, but perhaps by M. Bentink. The long and instructive notes by M. Bentink were collected apart, and form the description of Tatary in the Recueil des Voyages du Nord, tome x., and the Histoire Generale des Voyages, tome vii.

Russian and Chinese Plenipotentiaries, and the limits specified were a chain of mountains far to the north of the Amur, and the source of the small river Gorbitza*, thence to where that river joins the Amur, and lastly along the Argoon or Argounia, &c.[3] By this treaty the Russians assert that they not only lost a wide territory, but also the navigation of the river Amur, which would have been of great consequence to their remote possessions in Asia: yet the advantage was gained of a commercial intercourse with the Chinese. In 1727 the limits were continued westward from the source of the Argoon to the mountain Sabyntaban, near the conflux of two rivers with the Yenesei; the boundary being thus ascertained between the Russians and the Monguls subject to China. The trade with China has been latterly conducted at Zuruchaitu, on the river Argoon, lat. 50. long. 117., and at Kiachta, about 90 miles S. of the sea of Baikal, lat. 51. long. 106†. This boundary between two states is the most extensive on the globe, reaching from about the 65th to the 145th degree of longitude; eighty degrees (latitude fifty) computed at 39 geographical miles, will yield the result of 3120 miles. Its history therefore becomes singular and interesting; but it is probable that the Russians will insist upon extending the boundary to the river Amur, which would form a natural limit, as there are no chains of mountains in a proper direction further to the south between their empire and China.

The most curious antiquities seem to be the stone tombs which abound in some stepps, particularly near the river Yenesei, representing in rude sculpture human faces, camels, horsemen with lances, and other objects. Here are found besides human bones those of horses and oxen, with fragments of pottery and ornaments of dress[4]. The most singular ancient monument in Siberia is on the river Abakan not far from Tomsk, being a large tomb with rude figures ‡.

* This river, also called Gagatchi, appears from the map in Pallas's travels to join the Amur from the north, a little below the junction of the Argoun from the south, being the third river from the town of Albasin on Yaksa, which was destroyed by the Chinese in the middle of the sixteenth century. This river does not there form the boundary, which runs further to the west, and is arbitrary.

[3] Coxe, 200. De Halde, iv.

† Mr. Coxe, p. 212, unaccountably says 35° N. latitude.

‡ Pallas, vi. 240.

[4] Dec. Russ. vi. 210.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Ecclesiastical Geography. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION. THE Grecian system of the Christian faith, which is embraced by the Russians, has made inconsiderable progress in their Asiatic possessions. Many of the Tatar tribes in the S. W. are Mahometans; and others follow the superstition of Dalai Lama, of which an account shall be given in the description of the Chinese empire. But the more eastern Tatars are generally addicted to the Schaman religion, a system chiefly founded on the self-existence of matter, a spiritual world, and the general restitution of all things [1]. The Schamanians even believe that the Burchans, or gods themselves, arose from the general mass of matter and spirit. Their epochs of destruction and restitution somewhat resemble those of the Hindoos. While common souls immediately receive their final decree, the virtuous become chubils, or wandering spirits, who are purified by transmigration, so as also to become Burchans, or gods. Between men and gods are the Tengri, or spirits of the air, who direct sublunary affairs, and all the trifles so important to man, but beneath the most remote attention of the gods. The infernal regions chiefly contain those who have offended the priesthood. This system is intimately connected with that of the Dalai Lama, and is so widely diffused that some have asserted Schamanism to be the most prevalent system on the globe*. In Asiatic Russia it is professed by most nations, as a great part of the Tatars, with the Fins, Samoieds, and Ostiaks, the Mandshurs, and Burats, and Tunguses; and has even passed to the Coriaks, and Techuks, and people of the eastern isles [2]. The population indeed of Asiatic Russia scarcely exceeds three millions, but many of the Chinese are Schamanians, and the system is intimately connected with that of the Brahmins, or rather of Boodh. On the eastern coast of the sea of Baikal is the rock of the Schamans, an idol of a singular shape: and among the inferior spirits may be named the Garan, or aquatic fairies, the Ilguirki those of the earth, Temir Kam those of the mountains, and Vodasch those of the forests. But as the Schamanians admit one chief infernal deity and his subalterns, authors of evil, so they believe in one supreme uncreated beneficent being, who commits the management of the universe to inferior deities, who delegate portions of it to subaltern spirits. With more philosophy they might suppose that evil cannot exist except in matter, and that an evil spirit is a contradiction in terms. It might afford a subject of curious enquiry to investigate whether Schamanism be the parent of the Boodian, and Brahmin system, as some suppose, preserved in its original state among these barbarous tribes: or only a corruption of those diffused from India.

[1] Tooke's Russia, 1783. iv. 42.

* In his first volume Mr. Tooke asserts that this system is the parent of Brahminism; and that the Schamanians are by Strabo called *Germanians*, by Clemens Alexandrinus *Sarmanians*, by Porphyry *Samanians*.

[2] Tooke's Russia, 1783. iii.

Few literary topics can be more interesting, as it would not only embrace the sources of the Hindoo mythology, but also those of classical paganism.

The archiepiscopal see of Tobolsk is the metropolitan of Russian Asia in the north and that of Astracan in the south. There is another see, that of Irkutsk and Nershinsk; and perhaps a few others of recent foundation.

GOVERNMENT.] Siberia is divided into two great governments, that of Tobolsk in the west, and Irkutsk in the east. The smaller provinces are Kolivan, Nershinsk, Yakutsk, and Ochotsk. In the S. W. is the government of Caucasus, with one or two other divisions, intermingling Europe and Asia. At a distance from the capital the government becomes proportionably lax, and tribute is the chief mark of subjection.

POPULATION.] The population of Siberia cannot be computed at above three millions and a half[3]; so that Europe can in future have little to apprehend from the Tataric swarms. Small Russian colonies have been established in several of the distant provinces and isles. The political importance and relations of this part of the Russian empire chiefly relate to China and Japan. The late empress had, it is said, projected the conquest of Japan, which might perhaps have imparted a spirit of industry to her continental possessions in that quarter; and it was computed that 10,000 Russians could have conquered China. But the subjection of many parts of what was called Independent Tatary have given to China a military frontier, and the proximity to Pekin, the capital, being so much greater, the Chinese efforts would be speedy and probably decisive; while the march of Russian reinforcements, through such wide and barren regions, would be difficult and hazardous. In fact, on settling the frontier the Russians were overawed by superior numbers, though it is probable that at no distant period the river Amur, also called the Sagalien Oula, may be established as the boundary. The conquest of Japan, though more difficult than may have been conceived, affords many commercial temptations, but that of China would seem too vast even for the most grasping ambition. It is also asserted that the late empress, in case of a war with England, meditated to send an army from her Asiatic possessions to Hindostan through the provinces on the east of the Caspian, by Samarcand, and Cashmir to the Ganges. This indeed would be but a trifling effort compared with the marches of Zingis, Timur, and other oriental chiefs. But the mode of warfare is greatly changed. When Voltaire instigated Catharine to seize Constantinople, she replied that an epic poet easily might; but that modern armies consist of men who eat, and all her power could not produce magazines of provisions. This difficulty would be found far more cogent in a march of greater length, except that the powers in the north of India were unanimous in the favour of the Russians.

[3] Tooke's View, ii. 132.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs. — Language. — Literature. — Education. — Cities and Towns. — Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of Asiatic Russia vary with the numerous tribes, by whom that extensive region is peopled. The Tatars properly so called, are the most numerous, not only remaining in their ancient kingdom of Sibir, but constituting many other tribes in the west, as the Nogays, the Kirguses or Kaizaks, the Bashkirs, and other tribes as far as the sources of the river Ob. Next in importance are the Monguls, of whom one tribe, the Kalmuks, are found to the west of the Caspian; while the others, called Burats. Torguts, &c. are chiefly around the sea of Baikal. Yet further to the east are the Mandshurs, or Tunguses. Such are the three radically distinct divisions of men, whom former European ignorance classed under the general name of Tartars.

The manners of the Tatars, who are the same people with the Huns of antiquity, are minutely described by those authors who have delineated the fall of the Roman empire, prior to which period they seem to have been absolutely unknown to the ancients, though many modern authors have erroneously confounded them with the Scythians of Herodotus, and other Gothic tribes, who were afterwards vanquished, or expelled by the Tatars. Nor are the Seres, a mild industrious race, to be regarded as Tatars, but as, perhaps, northern Hindoos *. It would be superfluous to enter into a detail of the manners and customs of the various nations in Asiatic Russia, for which the reader may be referred to the works of Pallas, and other recent travellers. In so ample a theme the difficulty is to select; and the manners of the Monguls may be chosen as a specimen. Those of the Russian empire are wholly Nomadic, their herds consisting of horses, camels, oxen, sheep, and goats. The women tan leather, dig the culinary roots, prepare the winter provisions dried or salted, and distil the koumiss, or spirit of mare's milk. The men hunt the numerous beasts, and game, that roam through the vast wilds. Their tents are formed of a kind of felt, and in some parts they erect little temples, and the priests have also wooden hovels around the temples. The Kalmuks are divided into three ranks; the nobility, whom they call white bones; the common people, who are bondmen, and termed black bones; and the clergy, descending from both, who are free [1]. In like manner, the noble ladies are called white flesh; and the common women black flesh: but pedigrees are only reckoned by the bones. The power of the *Taidsha*, or chief prince, consists solely in the number and opulence of his subjects, territory being of no estimation in so wide a region. These subjects form an *Oluss*, divided into *Imaks*, from 150 to 300 families: each Imak being commanded by a *Saissan*, or noble. If there be a great Khan, or emperor, the princes are only guided by him in affairs of general importance. The tribute is about a tenth part of the cattle, and other property; but on the first summons every man

* The Bucharian language has not been investigated.

[1] Tooke, iv. 14.

must appear on horseback before the prince, who dismisses those who are unfit for the fatigues of war. The weapons are bows, lances, and sabres, and sometimes fire-arms; and the rich warriors are clothed in mail of interwoven rings, like that used in Europe till the fifteenth century. But they cannot oppose regular armies, and are apt even to disorder that of their allies.

The Monguls are rather short in stature, with flat visage, small oblique eyes *, thick lips, and a short chin, with a scanty beard. The ears are very large and prominent, the hair black, and the complexion of a reddish, or yellowish brown; but that of the women is clear, and of a healthy white and red. They have surprising quickness of sight and apprehension; and are docile, hospitable, beneficent, active, and voluptuous. Industry is a virtue entirely female; yet great, and accompanied with perpetual cheerfulness. Their religious books are in the dialect of Tangut, or Tibet, and there is a schoolmaster in every Imak, who imparts more knowledge to the boys than would be expected. Marriages are celebrated at an early age; and the bride brings a dower in cattle or sheep. The tent has a fire place in the middle; and in the desarts dried cow-dung is used for fuel. The tents of the nobles are hung with silk, and the floor covered with carpets of Persia. The household utensils are numerous; and in the superior tents are vessels of pewter, silver, and porcelain. The dress consists of a flat yellow bonnet, while the head is shaven except one lock. The trowsers are wide, the vest of light stuff with narrow sleeves, and a girdle which supports the sabre, knife, and implements for smoking tobacco. The outer garment is of cloth, with wide sleeves, and linen is wound about the feet, over which are drawn buskins of leather, generally black or yellow. Shirts are unknown: and the dress of the women is the same, but instead of the outer garment they wear a gown without sleeves. The hair of the females is long, and plaited in tresses. Animal food is abundant, and sometimes mixed with vegetable; while the general drink is water; but they sometimes indulge in sour milk, prepared after the Tatarian manner, butter milk, and koumiss, but mead and brandy are now greater favourites. When pasturage begins to fail, the whole tribes strike their tents, generally from ten to fifteen times in the year, proceeding in the summer to the northern, and in the winter to the southern wilds. The herds, men, women and children, form a regular procession; and are followed by the girls, singing with harmony and spirit. The amusements of these jovial wanderers consist in running races on horseback, in which even the girls excel; archery, wrestling, pantomime, dances, and the songs of the young women, generally accompanied by the lute, viol, and pipe, the themes of their ditties being gigantic tales of chivalry, and amorous adventures and sentiments, but the melody is harsh and dismal. Cards are not unknown, but chess is the favourite game. The bodies of the princes and chief priests, are burnt with many solemnities; and the tombs are sometimes walled, and ornamented with high poles, and fantastic drapery.

Mr. Tooke has printed some curious pieces of Kalmuk poetry, from which a characteristic specimen shall be selected, being an elegy on the secession of a hord on the Volga, which, disgusted by the Russian domination, sought the protection of China[2].

" The water of the vast ocean,
When it has raged with all its fury, becalms itself again;
This is the course of the world; and likewise still to forget.
Ye white herds, with the mark of Schæbiner!
Thou prince Schereng, in the van as conductor,
Riding on thy noble reddish-bay horse;

* The eye ascending towards the temples, like the Chinese, seems a peculiar feature of the Monguls and Mandshurs. The Tatar eye is small, but strait or horizontal.

[2] Russia, 1783, 4 vols. 8vo. vol iv. p. 66.

Such

The prince Zebek following with his numerous troop,
Ah! Ubaschakhan, conduct as now the Torgots!
There over rocks, over stones, and rough places,
The herds drag themselves along, and become lean,
By flying over the land all covered with snow and frost.
Ah! how the droves trot over the snow!
Now you are got thither and come to your resting place.
Why was there any quarrel between thee and the white Khan *?
Ye otherwise peaceful Torgots between the Yaik and the Volga,
How far ye now retreat!
Ah! the beautiful Volga (Idshel) is abandoned by the Torgot.
Ah! the lovely stream of Mazak is now likewise become an orphan.
Ah! thy many excellent young princes,
Ye are now all marched far away over the Yaik.
Ah! thou well arranged troop of Torgots,
Art now perhaps arrived at the Irtisch (Ertschis).
Ah! helpless lamentable time!
Thou excellent host of warriors marching towards Altai.
Ye have no princely women among you!
Fare ye well, ye who bring up the rear of the hord,
Princes Aksakal and Kirep!"

Such, with some slight shades of difference, are also the manners of the Tatars, and Mandshurs; and Rousseau might, with far more plausibility, have enquired concerning the perfection, and happiness of man among those spirited and gay tribes of barbarians, than among the savages of Africa, or America.

NORTHERN TUNGUSES.] "The Tunguses wander over an amazing extent of ground, from the mouth of the Amur to the Baikal Lake, the rivers Angara, or Tungooska, Lena, Aldan, Yudoma, Mayo, Ud, the sea coast of Ochotsk, the Amicon, Kovima, Indigirka, Alasey, the coast of the Icy sea, and all the mountains of these parts; constantly on the look-out for animals of the chase †. They seldom reside more than six days in one place, but remove their tents, though it be to the small distance of twenty fathoms, and this only in the fishing season, and during the time of collecting berries in such solitary places as are far distant from the habitation of Cossacs ‡. Here they leave their supplies of dried fish and berries, in large boxes built on trees or poles, for the benefit of themselves and their tribes in travelling during the winter. Berries they dry by mixing them with the undigested food (*lichen*) out of the stomach of the rein-deer, making their cakes, which they spread on the bark of trees, and dry upon their huts in the sun or wind.

"They seem callous to the effects of heat or cold; their tents are covered with shamoy, or the inner bark of the birch, which they render as pliable as leather, by rolling it up; and keeping it for some time in the steam of boiling water and smoke.

"Their winter dress is the skin of the deer, or wild sheep, dressed with the hair on; a breast-piece of the same which ties round the neck, and reaches down to the waist, widening towards the bottom, and neatly ornamented with embroidery and beads; pantaloons of the same materials, which also furnish them with short stockings and boots of the legs of rein-deer with the hair outward; a fur cap and gloves. Their summer dress only differs in being simple leather without the hair.

"They obtain supplies of food from the Russian inhabitants of the Amicon, Indigirka, Uyandina, Alasey, Kovima, Zashiversk, Ochotsk, &c. They are religious observers of their word, punctual and exact in traffic; some few are christened; but the

*Zagan Khaian, the name by which the Russian monarch is known among almost all the eastern nations.

† Sauer's expedition of Billings, London, 1802, p. 47.

‡ "They say, that their tents contract a disagreeable smell from remaining long in one place."

greater part are Demonolatrians, have their sorcerers, and sacrifice chiefly to evil spirits.

" An unchristened Tunguse went into one of the churches at Yakutsk, placed himself before the painting of Saint Nicholas, bowed very respectfully, and laid down a number of rich skins, consisting of black and red foxes, sables, squirrels, &c. which he took out of a bag. On being asked why he did so, he replied, ' My brother, who is ' christened, was so ill that we expected his death. He called upon St. Nicholas, but ' would have no sorcerer. I promised that if Nicholas would let him live, I would ' give him what I caught in my first chase. My brother recovered, I obtained these ' skins and there they are.' He then bowed again and retired.

" They commonly hunt with the bow and arrow, but some have rifle-barrelled guns. They do not like to bury their dead, but place the body dressed in its best apparel, in a strong box, and suspend it between two trees. The implements of the chase belonging to the deceased are buried under the box. Except a sorcerer is very near, no ceremony is observed, but in his presence they kill a deer, offer a part to the demons, and eat the rest.

" They allow polygamy; but the first wife is the chief, and is attended by the rest. The ceremony of marriage is a simple purchase of a girl from her father; from 20 to 100 deer are given, or the bridegroom works a stated time for the benefit of the bride's father. The unmarried are not remarkable for chastity. A man will give his daughter for a time to any friend or traveller that he takes a liking to; if he has no daughter he will give his servant, but not his wives.

" They are rather below the middle size, and extremely active; have lively smiling countenances with small eyes; and both sexes are great lovers of brandy.

" I asked my Tunguse, why they had not settled places of residence? They answered, that they know no greater curse than to live in one place, like a Russian, or Yakut, where filth accumulates, and fills the habitation with stench and disease.

" They wander about the mountains. and seldom visit such plains as are inhabited by the Yakuts; but frequently resort to the solitary habitations of the Cossacs appointed to the different stages, as they are there generally supplied with brandy, needles, thread, and such trifles as are requisite among them and their women, who always accompany them in their wanderings."

Concerning the manners of the Samoieds little is known, as no inquisitive traveller has visited their bleak and barren heaths, and marshes. Mr. Pennant has styled them the Hottentots of the north, and describes them as resembling the Laplanders, but far more ugly and brutal [4]. They use the rein-deer to draw their sledges, but seem strangers to its milk, and feed foully on quadrupeds, and fish.

KAMCHADALS.] A late ingenious traveller affords more precise information concerning the manners of the Kamchadals, and the Techuks, the most remote people of Asiatic Russia[5]. He travelled in the winter, when the snowy hurricanes were often so thick as to obstruct the view as much as a heavy fog. The isbas, or balagans, huts of the Kamchadals, are in the south raised on posts, about 12 or 13 feet high, for the purpose of drying their fish, almost their only food. A cotton shirt is worn next their skin, with trowsers, and a loose frock of deer skin; the boots are of tanned leather, and the cap of fur. The men are chiefly occupied in catching fish, and in the summer the women proceed to the woods to gather fruits and vegetables, when they abandon themselves to a kind of bacchanalian frenzy. The Kamchadals are of small stature,

[4] Arct. Zool. p. cliv.

[5] Travels in Kamchatka by Lesseps, 1790. 2 vols. 8vo. Lesseps attended La Perouse, and returned with dispatches through Asiatic Russia.

Vol. II. page 25.

with little hollow eyes, prominent cheek-bones, flat nose, black hair, scarcely any beard, and a tawny complexion. They considerably resemble the Japanese; and their character is mild and hospitable. Instead of the rein-deer, the dogs, which resemble the shepherd-curs of France, draw a light sledge, upon which the traveller sits in a side position. In the north of Kamchatka the hovels are partly excavated under ground, like those which Dr. Brown observed near Belgrade, for the sake of warmth, but the confined air and stench are almost insupportable.

TECHUKS.] The Techuks, who in all scarcely exceed a thousand families, are generally found in small camps, pitched by the side of the rivers. The rude tents are square, consisting of four poles supporting skins of rein-deer, which also form the covering; before every tent are spears and arrows, fixed in the snow against any sudden attacks of the Koriaks, who, though of the same race, are a more malicious and enterprising people. In the midst is a stove, and the bed consists of small branches of trees spread on the snow, and covered with deer skins. Their habitations and food are dirty and disgusting; and the dress of the women consists only of a single deer skin fastened at the neck, so that on loosing one knot the lady remains naked. The features are coarse, but they have not the flat noses, nor little hollow eyes, of the Kamchadals; and Lesseps pronounces their countenance to have nothing of the Asiatic form, in which assertion he had been preceded by Pallas and Tooke. Even the Koriaks are supposed not to exceed 2000 families.[6]

Further to the west the Yakuts around the town called Yakutsk, and a tribe of the same people, called Yukagirs, near the Arctic ocean, are degenerate Tatars who fled into these remote regions from the power of the Monguls, and preserve their language and manners, as far as a more severe climate will permit. The Ostiacks are chiefly Samoieds, though some of their tribes seem to be Fins, who, in the interchange of nomadic nations, have passed from the European side to the Uralian chain.

Upon the whole, the three distinct barbaric nations of Tatars, Monguls, and Tunguses, or Mandshurs, are by far the most interesting in these middle regions of Asia, as their ancestors have overturned the greatest empires, and repeatedly influenced the destiny of half the globe. The vague name of Tartary is nearly discarded from our maps, and might yield with far greater precision to names derived from the seats of the chief nations, as Tungusia, or Mandshuria, in the east, Mongolia in the centre, and Tataria in the west. Of these the Monguls are the chief people, and the account already given of their manners will suffice, with the preceding descriptions of some other tribes, to impart an idea of the ethical condition of Asiatic Russia.

LANGUAGE.] The languages of all these original nations are radically different; and among the Tunguses, Monguls, and Tatars, there are some slight traces of literature; and not a few manuscripts in their several languages. The history of the Tatars, by Abulgasi, is a favourable specimen of Tataric composition. The late emperor of China ordered many of the best Chinese works to be translated into the Mandshur language, which, having an alphabet, may be more easily acquired than the original. In the Mongul language there are also many books, written in the various countries to which their wide conquests extended. Superior, even amid their barbarism, to the chief original nations of Africa, and America, the central races of Asia deserve an attention which has been lavished upon inferior objects.

M. Langles, in the only valuable addition to the last French edition of this work, has discussed the various Asiatic languages with considerable perspicuity. Under this article he chiefly illustrates the Tatar and Mongul tongues, reserving the Mandshur for the account of China.

The numerous conformities between the languages and letters, or rather syllables, of the Monguls and Kalmuks, leave little doubt that they anciently formed one people, as the intelligent Strahlemberg had long ago asserted in the first work which gave to

[6] Lesseps, ii. 84.

astonished Europe any just idea of the prodigious extent of the Russian empire in Asia. Their literature is equally ancient, but in recent times the Kalmuks have adopted many Finnish expressions. Their code of laws is highly praised by Pallas, and they had at one time a printing press on the banks of the Volga.

The language of the Burats is also a dialect of the Mongul, but very guttural and harsh.

Adelung and Georgi have illustrated the languages of Siberia, amounting to seven or eight. The Tchoud or ancient Finnish is one of the most remarkable, and any remains of ancient art are by the present inhabitants ascribed to that people who, in their European settlements, had had commercial towns in the middle ages.

The language of the Kirguses approaches to the Tatar, as they formerly resided in Turkestan. That of the people of Kamchatka has different dialects, some approaching the Mongul-Chinese.

" The Koriaks have two dialects, that of the wandering tribes, and that of the settled. Their language has much affinity with that of the Techuks and of the neighbouring isles: but there are peculiar idioms and expressions.

" The Kurils have a particular language, of which the pronunciation is slow, clear, and agreeable. The vowels are well mingled with the consonants.

" The resemblance between the Techuks and the Koriaks in persons and manners, as well as in the language, is so striking, that their common origin cannot be doubted. This is proved by the vocabulary published by Lesseps, as well as by the remark of Stellér, that these two nations easily understand the language of each other."

Cities.] Astracan, Azof, Gurief, and Orenburg, having been assigned to Europe by the recent natural division, we begin with Tobolsk.

Tobolsk.] On passing the Uralian chain first occurs the city of Tobolsk, which only contains about 15,000 souls, but is esteemed the capital of Siberia. Being mostly built of wood, it was nearly consumed by a violent fire about 1786; but it is believed is now rebuilt chiefly of stone. Tobolsk is more distinguished as the residence of the governor and archbishop, than for the importance of its commerce. The upper town stands on a hill, on the east side of the Irtish, and contains a stone fortress of some strength. Indian goods are brought hither by Kalmuk and Bucharian merchants; and provisions are cheap and plentiful.

Kolyvan.] Kolyvan is a town of some consequence on the river Ob. In the neighbourhood there are silver mines of considerable produce. To the north of Kolyvan is Tomsk, said to contain about 8000 souls.

Further to the east the towns become of less consequence, but a village attracts attention when situated in a desart. On the river Yenisei is a small town of the same name; and another called Sayansk, whence the adjacent part of the Altaian chain is called the mountains of Sayansk.

Irkutsk.] On the river Angara, which issues from the sea of Baikal, stands Irkutsk, supposed to contain 12,000 inhabitants. There are several churches and other edifices of stone, and the wooden houses are large and convenient. Irkutsk is the chief mart of the commerce between Russia and China, the see of an archbishop, and the seat of supreme jurisdiction over Eastern Siberia.[7] The numerous officers and magistrates have introduced the customs and fashions of Petersburgh, and European equipages are not uncommon in this distant region.

Yakutsk.] On the wide and frozen Lena stands Yakutsk, with some stone churches, but the houses are mostly of wood, and inhabited chiefly by Russians, as the Yakuts are fond of a wandering life. Lesseps says that the Lena is here about two leagues in width, (though about 700 miles from its mouth,) but is greatly impeded with ice; and there are only a few small barks, chiefly employed in supplying the town with provisions. Ochotsk, on the sea of the same name, may be rather regarded as a station than a town.

[7] Lesseps, ii. 344.

Manu-

MANUFACTURES.] There are some manufactures, particularly in leather, at Astracan; and salt is prepared there, and in several other places in Asiatic Russia. Isinglass is chiefly manufactured on the shores of the Caspian, from the sounds or air bladder of the sturgeon, and the beluga. Kaviar is the salted roe of large fish. There is a considerable fabric of nitre, about 40 miles to the north of Astracan; but though aluminous earth abounds near the Argoon, and Yenisei, yet it is almost neglected. The Tatars and Bashkirs make felts of a large size, some of which are exported. The Russia leather is chiefly fabricated in the European provinces, being tanned with willow bark, and afterwards stained. Shagreen is prepared from the hides of horses, or asses, but only a particular part of the back is fit for this purpose; and the grain is given with the hard seeds of the greater Orach, prest into the leather while moist [9]. Pitch is made by the boors from the pines of Siberia. Near the Uralian mountains are several manufactures in iron and copper.

COMMERCE.] The chief commerce of this part of the Russian empire consists in sables, and other valuable furs, which are eagerly bought by the Chinese, who return tea, silk, and nankeen. That with the Kirguses consists in exchanging Russian woollen cloths, iron, and household articles, for horses, cattle, sheep, and beautiful sheep skins. On the Black Sea there is some commerce with Turkey, the exports being furs, kaviar, iron, linen, &c., and the imports wine, fruit, coffee, silks, rice. In the trade on the Caspian the exports are the same; but the return chiefly silk. The principal Russian harbours are Astracan, Gurief, and Kisliar, near the mouth of the Terek, but the best haven is Baku, belonging to the Persians. The Tatars, on the east of the Caspian, bring the products of their country, and of Bucharia, as cotton yarn, furs, stuffs, hides, rhubarb; but the chief article is raw silk, from Shirvan, and Ghilan, on the west of the Caspian.

[9] Tooke's View, iii. 531.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons. — Face of the Country. — Soil and Agriculture. — Rivers. — Lakes. — Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Mineral Waters. — Natural Curiosities.

CLIMATE AND SEASONS.] IN Asiatic Russia the climate extends from the vine at the bottom of Caucasus, to the solitary lichen on the rocks of the Arctic ocean. Through the greater part of Siberia, the most southern frontier being about 50°, while the northern ascends to 78°, the general climate may more justly be regarded as frigid than temperate; being, in three quarters of the country, on a level with that of Norway and Lapland, untempered by the gales of the Atlantic. To the south of the sea of Baikal the climate parallels with that of Berlin, and the north of Germany, so that the finest and most fertile regions in middle Asia belong to the Chinese. The chains of high mountains, which form the southern boundary of these provinces, also contribute to increase the cold; and the sea of Baikal is commonly entirely frozen from December till May. The finest climate in these eastern parts seems to be that of Daouria, or the province around Nershinsk; and the numerous towns on the Amur evince the great superiority of what is called Chinese Tatary, which is comparatively a fertile and temperate region. The change of the seasons is very rapid; the long winter is almost instantaneously succeeded by a warm spring; and the quickness and luxuriance of the vegetation exceed description.

FACE OF THE COUNTRY.] In a general view of Asiatic Russia, the northern and eastern parts present vast marshy plains, covered with almost perpetual snow, and pervaded by enormous rivers, which, under masses of ice, pursue their dreary way to the Arctic ocean. Even the central parts of Siberia seem destitute of trees, vegetation being checked by the severe cold of so wide a continent. Towards the south there are vast forests of pine, fir, larch, and other trees, among which is a kind of mulberry, which might probably thrive equally in many climates which are now destitute of that valuable tree. The sublime scenes around the sea of Baikal are agreeably contrasted with the marks of human industry, the cultivated field and the garden*. Even in the south the rivers have already acquired the size of the Danube, and the Rhine, and they are navigable with safety for a great extent. The vast plains called stepps constitute a feature almost peculiarly Asiatic; but the mountains do not correspond in dignity; rather resembling the Apennines, than the Alps, or even the Pyrenees.

Towards the furthest north, our ideas of the general state of the country may be partly derived from a voyage down the Obt, published by Pallas, from the voyages to Novaya Zemla, or the New Land, and to the adjacent shore, and from the recent expedition of Billings to the mouth of the Kovima. Gmelin has described the countries near Mangazeia and Obdorsk, the former being a town near the mouth of the Tas, but the new station is more commonly called Turechansk, seated on a branch

* See Bell's animated description of this region.

† Pallas, v. 79.

of

of the Yenesei, while Obdorsk is near the junction of the river Ob with its gulph. From the voyage to the Frozen Ocean, published by Pallas, it appears that the right bank of the Ob, after it is joined by the Irtish, is generally mountainous, while the left is flat. At Obdorsk the summer is very short, but the sun never sets in that season. Near the Frozen Ocean are primitive mountains of granite with asbestos, micaceous schistus, and petrosilex, while the vegetable tribes are dwarf willows and birches, and the arbutus alpina. It was reported that the chain of Uralian mountains terminates opposite to Novaya Zemla. The skull of a rhinoceros was found very far to the north, and the bones of the mammoth are thrown ashore from the frozen ocean. It is not impossible that these remains may have been driven by currents from very distant quarters of the globe, and even deposited on the banks of rivers by the tide when a great part of the north of Siberia was covered by the sea. From the voyage of Billings, it appears that these bones particularly abound in the parts which he visited; he says, that the tusks of the mammoth are equal to elephant's teeth in whiteness and beauty, but very different in their shape, being all bent spirally, forming about one round and a half. Eight feet form the greatest length. On the eastern shores of the river Covima, which are likewise high, are found granite, agates, calcedony, and jasper *. The larch extends to 68° 30′, while creeping willows are found on the Icy sea, where they are from six to eight inches in length.

Soil and Agriculture.] Many parts of Siberia are totally incapable of agriculture; but in the southern and western districts the soil is of remarkable fertility. Towards the north of Kolivan barley generally yields more than twelve fold, and oats commonly twenty fold[1]. Buck wheat, in this black light mould, is apt to run into stalk, but sown in the poorest spots yields from twelve to fifteen fold. Exclusive of winter wheat, most of the usual European grains prosper in southern Siberia. It is remarkable that the culture of potatoes has not yet appeared, the Russians having some strange prejudices against that invaluable plant. In some parts flax grows wild, and hemp is also prepared from the nettle. Woad is found in Siberia, and saffron near the Caucasus. The culture of the olive tree has been attempted near Astracan, and the heat of the summer was sufficient, but the winter cold too severe. The best rhubarb abounds on the banks of the Ural, or Jaic, in the southern districts watered by the Yenisei, and in the mountains of Daouria, and might be cultivated with advantage in these its native regions.

But in all parts of the Russian empire agriculture has made little progress; nor indeed is it possible while the peasantry are slaves, and sold with the soil: and if even a free farmer acquire a little money, a noble neighbour will seize the fruits of his industry. In spite of these obstacles an intelligent traveller was surprised at the abundance of buck wheat, rye, barley, oats, and other grain which he observed to the south of Tobolsk; where the cattle were also very numerous, and in the winter fed with hay[2]. Nay, he assures us that in 1720, when he accompanied the Russian ambassador to Pekin, he observed to the south of the sea of Baikal rich crops of *wheat*, rye, barley, oats, buck wheat, and peas, besides culinary plants; but the inhabitants had not then begun to plant any fruit trees, though in his opinion they would prosper, as the snow never lay above two months on the ground[3]. The large garden strawberry, called haut-bois, is found wild in the territory of Irkutsk: and on

* Sauer's Expedition of Billings, 1802, 4to. p. 93. 84.

[1] Tooke's View, iii. 238.

[2] Bell, i. 228. 8vo edition.

[3] Ib. 326. Pallas, iv. 347, says that the Cossacs find that grain sown on calcareous hills thrives better than any where else. Hence such hills are often observed in Britain and Ireland to have been ploughed in ancient times when the low lands were probably only large marshes.

the

the Altaian mountains the red currant attains the size of a common cherry, ripening in large bunches of excellent flavour. Near the Volga and the Ural are excellent melons of various kinds. Bees are not known in Siberia; but among the Bashkirs, to the west of the Uralian chain, form an article of great advantage to the farmer.

Rivers.] Some of the largest rivers of Asia belong to the Russian empire, nearly equalling in the length of their course any others on the globe. The Ob, including its wide estuary, may be said to hold a comparative course of 1,900 British miles; while that of the Yenesei is about 1750; and that of the Lena 1570. In the same mode of mensuration the Hoan Ho of the Chinese, will, in its wandering progress, exceed the Ob; while the Kian Ku, pervading the center of China, may be traced, if the Porticho be included, for a length of about 2000 miles!

The Ob may be traced from the lake of Altyn, lat. 51°, if its source be not even followed along the Shabekan river to lat. 47°. The upper Irtish flows into the lake of Saisan, whence it issues under the name of Lower Irtish, and after a circuit of great extent joins the Ob below Samarof. It rises about the 45°, and ought perhaps to be regarded as the principal stream. But such doubts are frequent concerning the Siberian rivers in particular, the names, and distinctions proposed by ignorant barbarians, usurping the place of exact geography. However this be, the Ob, piercing the Altaian chain, after having received many small streams, passes Kolyvan, and at some distance to the N. receives the Tomm, and other large rivers from the east. Below Samarof, as already mentioned, it receives the great river Irtish, and runs into the sea of Ob, a gulph of the Arctic ocean. The Ob is navigable almost to its source, that is to the lake of Altyn, and abounds with fish, but the sturgeon of the Irtish are the most esteemed. After it has been frozen for some time, the water becomes foul and fetid, owing to the slowness of the current, and the vast morasses; but the river is purified in the spring by the melting of the snow[4]. This is justly and universally esteemed the largest river in the Russian empire. The shores and channel are generally rocky till it receive the Ket; after which the course is through clay, marl, sand, and morasses.

Next is the Yenisei, which is considered as deriving its source from the mountains to the S. W. of the Baikal, in the river called Siskit; but the name Yenisei is not imparted till many streams have joined, when it holds its course almost due north to the Arctic ocean. Yet with far more propriety might the Yenisei be derived from the sea of Baikal, whence flows the Angara, afterwards absurdly called Tunguska*, being a stream of more length and importance than the Yenisei, so that the name of Angara might be continued till it join the Arctic sea†. This river has some rapids, but is navigable for a great way. The Angara, afterwards called Tunguska, is said to be about a mile in breadth, when it issues from the Baikal, and is so clear that the pebbles of the bottom may be seen at the depth of two fathoms[5]. The channel is full of rocks for the space of about a mile from its egress; and there is no passage for the smallest boats, except along the eastern bank. "The waters dashing upon the stones make a noise like the roaring of the sea, so that people near them can scarce hear one another speak. I cannot express the awfulness with which one is struck at the sight of such astonishing scenes of nature, as appear round this place, and which I believe are not to be equalled in the known world. The pilots and

[4] Pennant, Arc. Zool. clxi.

* There are two other rivers of this name further to the north, the largest joining the Yenisei in lat. 66°. But Mr. Pennant's Mangazea seems very doubtful, if it be not the village, or station called Tourouk Hansk.

† Accordingly De Guignes, in his description of Tatary, p. lxi. tells us, that according to the Chinese geographers, the Angara leaves the lake Baikal, receives the Yenisei, and afterwards joins the ocean.

[5] Bell, i. 307—315.

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sailors who navigate the lake speak of it with much reverence, calling it the Holy Sea, and the mountains about it the Holy Mountains; and are highly displeased with any person who speaks of it with disrespect, or calls it a lake[6]."

The Selinga is a noble river, further to the south, which flows into the sea of Baikal*, after receiving the Orchon and other rivers, among which is the Tula or Tola, the last stream that occurs till the wide desart be passed, which here divides the Russian empire from China Proper. The territory adjacent to the Selinga and the Onon is the most interesting in Siberia, abounding with new, and truly Asiatic botany, and zoology.

The last of these large rivers is the Lena, which rises to the west of the sea of Baikal, running nearly parallel with the Angara, from which it is separated by a chain of hills. The Lena receives the Witim, and the Olekma from the Yablonoi mountains; and, till near Yakutsk, pursues a course from the S. W. to the N. E., a direction of considerable utility, as affording navigation to the remote regions. From Yakutsk the course is nearly due north; the channel being of great breadth and full of islands. The current of the Lena is generally gentle, and the bottom sandy. Travellers sail from the Lena into the Aldan, thence into the Maia, and the Yudoma, their route to Ochotsk, and Kamchatka, being thus expedited.

Such are the most important rivers of Asiatic Russia, the Volga having been already described in the European division. The Yaik is a considerable stream which flows into the Caspian: the name was recently changed for that of Ural, on account of a daring insurrection of the tribes bordering on the Yaik†. The Terak also joins the Caspian on the west, and its chief consequence is derived from the fertility of its shores. The Kuban, or ancient Hypanis, runs in an opposite direction into the Euxine, the lower shores being plain, and destitute of wood, while near the sources are large forests.

Towards the other extremity of Asiatic Russia is the Anadir, which pervades the country of the Techuks. The long course of the Amur properly belongs to the Chinese dominions. The Argoon may be properly considered as the original Amur, while the Onon, also called the Schilka, which is regarded as another source of that great river, may be considered as entirely Russian. The course of the Onon is about 500 miles; and it receives numerous streams from mountains on the N. and S.[7]

LAKES.] In the north of Siberia the most considerable lake is that of Piazinsko. In the south the sea of Baikal is fresh, but the extent far exceeding that of any other lake; it has been described among the inland seas of Asia. Between the river Ob and the Irtish is a large lake, about half the length of the Baikal, or 170 miles in length, divided by an island into two parts, called the lakes of Tchany and Soumi. In this quarter there are many smaller lakes, and others to the north of the Caspian, some of which are salt, particularly that of Bogdo, near the small mountain so called, and considered as proofs of the northern extension of that sea. The Altan Nor, or golden lake, sometimes corruptly called Elton, is a large saline lake on the E. of Zaritzin. The lake of Altyn, already mentioned in the account of the river Ob, is called by the Russians Teletzko, and is considerably elevated on the north side of the Altaian mountains; but from the best maps is not above 40 miles in length, and 20 in breadth.

MOUNTAINS.] The Uralian mountains have been already described in the account of European Russia. The grandest chain in Siberia is that called the moun-

[6] Bell, i. 316.

* The Selinga might be regarded as the original Angara, or Yenisei, as the Ob, and Irtish also pass through lakes.

† This river alone rises on the E. of the Ural mountains, and afterwards pierces the granitic chain, and passes W. Dec. Russ. iv. 309.

[7] Dec. R. vi. 363.

tains of Altai which, according to Pallas*, crossing the head of the Irtish, presents precipitous and snowy summits between that river and the sources of the Ob. Thence it winds by the springs of the Yenisei, and the south of the sea of Baikal, where it is called the mountains of Sayansk. Here the Altaian chain bends in a more northerly direction to the neighbourhood of Ochotsk, under the appellation of the Yablonoi ridge, a name implying the mountains of Apples †. Branches of inferior height pass to the eastern extremity of Asia under the latter nam , or that of the Stanovoi mountains. The same chain in the north of Daouria is also called the Daourian mountains; and in this quarter a lower ridge passes due south towards China.

The Altaian chain, strictly so called, is by the Chinese denominated the Golden Ridge, perhaps from the rich metals which it contains. The stepp, or desart of Issim, seems to divide and distinguish it from the mountains of Ural, which bend by the west of Orenburgh: and there are salt lakes and other signs that the Caspian anciently extended in this direction.

According to Dr. Pallas, Bogdo Tola, or Bogdo Alim, the almighty mountain, rears its pointed summits with striking sublimity, on the limit between the Soongarian and Mongolian desarts, while a chain extends to the lake of Altyn in the N. W., and another to the S. E. called Changay, and a snowy ridge, that of Massart, passes south, and is supposed to join those of Tibet ‡; and lastly, this parent mountain sends forth a rocky arm "called Allakoola, or the checquered ridge, and by the Tartars Ala Tau, connected with the Kirgusian Alginskoi Sirt." Between the last ridge, and the Massart, according to our author, rise the river Sirr, or Sihon. and the Talas. From Alla koola the Ili runs north into the lake of Palkati, or Balkash, and the Emil and Tshui flow in the same direction. From the mighty Bogdo itself rises the upper Irtish, which flows into the lake of Saizan: hence this great mountain must be situated about long. 93° lat. 44°. It is thus probable that the Altaian chain is connected with the southern by other ridges besides that of Massart, the desarts between Siberia, and Hindostan, and eastern Bucharia being alternate hills and plains, and extremely rocky ?.

The western part of the Altaian chain is chiefly argillaceous, with granitic heights, containing schorl, but many parts are calcareous. Sinnaia-Sopka, or the blue mountain, the chief summit in the government of Kolyvan, does not exceed 3000 feet above the sea, and consists of coarse granite, with argillaceous schistus, and limestone at the bottom. Here a granitic ridge runs north towards the river Tsarish, abounding with ores of silver, copper, and zinc. Wacken, and siliceous schistus, with hornblende, and felspar, are also frequent in this part. The Schlangenberg is the richest in minerals, and near the river Alay to the N. W. branches of hills continue full of minerals, and often composed of porphyry and granite, one of them on the north of the river Ouba rising to 5691 English feet above the bed of the stream. That space of the Altaian chain which runs between the Ob and the Yenisei has been little explored; but affords granite, porphyry, jasper, primitive and secondary limestone, with serpentine, petrosilex, slate, mountain crystal, carnelian, and calcedony: one of the highest summits is the Sabin, near the source of the Abakan. In general

* He begins with the Great Bogdo, which, as afterwards appears, is a central summit, like St. Gothard in the Alps. The western commencement seems to be about long. 70° E. from London. See Arrowsmith's map of Asia, Islenieff, &c.

† The name is rather a mere corruption of the Bouriat appellation *Yableni-Daba*, Pallas, v. 378.

‡ This Massart, or Musart, may possibly be the Alak (Alak ula, or Alak Tag,) which joins the Belur Tag; but Mr. Tooke's translation from the German is far from clear, or applicable to modern maps. View of Russia, i. 145–175. See also Pallas *Sur la formation des Montagnes*, Paris, 1779, abridged in the sixth volume of the *Decouvertes Russes*.

? Pallas, ibid.

they

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they are bare, the chief forests being in the bottoms near the rivers, and consisting of pines, firs, larches, cedars, birch, aspine, alder, and willow. That portion called the Sayansk mountains also consists chiefly of granite, and porphyry, with several mines of talc, or Muscovy glass. Branches extend on both sides of the sea of Baikal, likewise presenting mines of talc, and promontories of milk-white quartz, other summits are of fine grained granite, and sometimes there are masses of felspar containing green schorl. Near Irkutsk coal has been found; and there are salt springs in many places. Other products of this rich district shall be mentioned in the mineralogy.

The mountains of Nershinsk, or Russian Daouria, send branches towards the Selinga, and the Amur. The chief heights are towards the sources of the Onon, and Ingoda, where there are precipitous summits of granite. A ridge passing S. W. and N. E. to the south of Nershinsk between the rivers Onon and Argoon, (the last of which is the real Amur,) is the most fertile in minerals of all Asiatic Russia. Among the products may be named granite, porphyry, jasper, calcedony, carnelian, onyx, petrosilex, large smoaky topazes, beryl, or aqua marine, the real topaz, the jacint, and beautiful schorls; with serpentine, asbestos, smectite, or indurated steatite, and alabaster, besides slate, and limestone. In this opulent district are also salt lakes, and warm springs with vitriolic pyrites, ores of alum, native sulphur, and coals. The metals are zinc, iron, copper; and many mines of lead ore, containing silver, and gold. The zoology and botany are alike curious and interesting*.

STANOVOI.] The chain of Stanovoi, otherwise called the mountains of Ochotsk, is only a continuation of the mountains of Daouria. This part has been little explored; but produces granite, porphyry, calcedony, and carnelian, with rock crystal, sulphureous pyrites, and ores of alum, and it is said that coal is found in this district. A great singularity of this ridge is, that some entire branches consist of beautiful red and green jasper †. That branch which pervades Kamchatka is little known, being covered with perpetual ice and snow, but it abounds with volcanoes; and the isles which stretch towards Japan are frequently volcanic, nor is the latter kingdom yet free from the ravages of burning mountains.

This grand chain contains almost the whole mountains of Siberia, the remainder of the land on the W. of the Yenesei being level; and to the E. of that river are only several long ranges extending from the S. to the N.

But in the S. W. part of Asiatic Russia some ranges deserve attention, as the lower part of the Uralian chain, which bends, as before observed, to the W. above Orenburg. The supposed branch connecting the Uralian and Altaian chains is doubtful, being far to the S. of the Russian boundary, and in a region little explored‡.

The classical range of Caucasus forms a partial limit between the Russian empire, and those of Turkey and Persia. Between the Euxine and the Caspian the Caucasian chain extends for about 400 British miles; and where the chief heights are distinctly marked about 5 miles in breadth, but in many places 20 or 30. The summits are covered with eternal ice and snow; and consist as usual of granite, succeeded by slate and limestone. In ancient times they produced gold; and there are still vestiges of silver, lead, and copper; and it is supposed of lapis lazuli. The vales abound with excellent forest trees§.

FORESTS.]

* The mountain Adunshollo, celebrated for minerals, is in the southern extremity of Russian Daouria. Dec. Russ. v. 502. That volume, and the sixth, or last, may be consulted for an account of this country.

† This beautiful substance extends even to Gore island, which is composed of green, red, and chiefly yellow jasper, veined with calcedony. Sauer, 235.

‡ Pallas mentions it in general terms as low and broken; and considers the Uralian ridge as bending S. W. towards the Yatik, and the Caspian. See Independent Tatary.

§ See the last travels of Pallas, 1793—4, London, 1801, 2 vols. 4to. In vol. i. p. 335, there is a curious description of the Caucasian chain, which may be compared with that of Gmelin, Dec. Russ. ii. iii. The

FORESTS.] Asiatic Russia is so abundant in forests that particular names have not been assigned to so vast an extent. On the west of the government of Irkutsk an enormous, dark, and marshy forest of resinous trees extends to the river Kan[8]. The northern and eastern parts of Siberia are bare of wood; the Norway fir not being found farther north than lat. 60°, while the silver fir does not exceed lat 58°. In Europe, on the contrary, the Norway fir forms extensive forests in Lapmark, within the arctic circle[9].

STEPPS.] After the forests may be considered the extensive level plains, an appearance of nature almost peculiar to Asia, and some parts of European Russia; but somewhat similar to the sandy desarts of Africa. The stepps are not so barren of vegetation, being mostly only sandy, with scattered patches of thin grass, and at wide intervals a stunted thicket. Between the mouths of the Don and Volga is a stepp which resembles the bed of a sea; with spots of salt, and saline lakes, being entirely destitute of fresh water and wood[10].

On the eastern side of the Volga begins an extensive stepp, formerly called that of the Kalmuks, from tribes who used to roam there, till they withdrew from the Russian dominions in 1771. To the S. it is bounded by the Caspian sea, and the lake Aral; while to the N. it may be regarded as connected with the stepp of Issim; and on the E. may be considered as extending to the river Sarasu; the greater part not belonging to the Russian dominions, but being abandoned to the wandering Kirguses. This vast desart extends about 700 British miles from E. to W.; and, including Issim, nearly as far from N. to S., but on the N. of the Caspian the breadth does not exceed 220. A ridge of sandy hills stretches from near the termination of the Uralian chain towards the Caspian; the rest is a prodigious sandy level, with sea shells, and salt pools*. There are however small districts capable of improvement, like the Oases, or isles in the midst of the African desarts. The north-eastern part of this stepp is connected with that of the Irtish; nay it is considered as extending even to the Ob, under the name of the Baraba stepp.

This stepp of Baraba, N. W. of Omsk, is about 400 miles in length, and 300 in breadth, containing a few salt lakes, but in general of a good black soil, interspersed with forests of birch †. That of Issim aspires but rarely to the same quality: and in both are found many tombs, inclosing the remains of pastoral chiefs, Tatar or Mongul.

The vast space between the Ob, and the Yenisei, from the north of Tomsk to the arctic ocean, is regarded as one stepp, being a prodigious level with no appearance of a mountain, and scarcely of a hill. The same term is applied to the wider space between the Yenisei and the Lena, between the arctic ocean on the north, and a river Tunguska‡, lat. 65°; and to the parts beyond the Lena as far as the river Kolyma, or Covima.

Persian name of the chief summit, *Elburz*, (see D'Anville's map of Asia) the Doctor latinizes *Elburus*, and then puzzles himself concerning the etymon. This stupendous alp Pallas supposes equal in height to Mont Blanc: it seems central, but nearer the Euxine than the Caspian. The Besh Tau is calcareous, and collects vapours like other calcareous mountains. Ib. iii. 70. The other chief heights are Ketshergan, Barmamut, Urdi, Kandshal. Sherefedin stiles the whole chain of Caucasus *Alburz*.

[8] Dec. Russ. vi. 183. [9] Pennant, A. Z. p. clxxx. [10] Tooke's View, i. 178.

* See in the last travels of Pallas, i. 178, a curious account of a detached mountain in this stepp, towards the Volga, called Bogdo Ula. This hill near the saline lake of Bogdo, has no connection, save in name, with the great mountains of Bogdo, in a remote quarter; the word only signifying *most mighty*, and Ula seems in the Kalmuk to imply a mountain, as in Mandshur a river. This singular solitary hill is visible at the distance of 25 miles.

† The poverty of descriptive language is frequently to be regretted. A Russian stepp sometimes resembles a desart, at other times a savanna waving with luxuriant grass.

‡ This vague name seems only to imply a river of the Tunguses. It is to be wished that the Academy of Sciences at Petersburg would revise the maps of Asiatic Russia, and give us distinct and pronounceable names. At present we may well wish for more knowledge, and fewer consonants.

BOTANY.]

Botany.] When we consider the vast extent of the Asiatic provinces of the Russian empire, the scantiness of their population, and the few years that have as yet elapsed since the first attempt to investigate their natural productions, we shall feel rather surprised at what has been done, than disappointed because no greater progress has been made in arranging and describing their indigenous vegetables. The labours of Steller and Gmelin, and lastly of Pallas, under the munificent patronage of the empress Catharine, have disclosed to the view of science the wilds of Siberia, and the desarts of Tatary, and though many extensive tracts continue wholly unexplored, yet from the ample specimen that has been surveyed, we may form a very probable conjecture concerning the botany of the remainder*.

Russia in Asia, with regard to its flora, is divided by nature into two unequal portions: the smaller of these is bounded on the west by the Don, and Wolga, on the east by the Uralian mountains, and on the south by the Caspian sea, and the Turkish and Persian frontiers. The climate of this district is delicious, and the soil fertile; it slopes towards the south, and is protected from the northern blasts by lofty mountainous ridges; in its botany it greatly resembles the province of Taurida, of which an account has already been given: the cedar, the cypress, the savine, red juniper, beech, and oak, clothe the sides of the mountains; the almond, the peach, and the fig abound in the warm recesses of the rocks: the quince, the apricot, the willow-leaved pear, and the vine are of frequent occurrence in the thickets, and on the edges of the forests. The date-plum, the jujube, and Christ's-thorn, are also natives of these provinces, and evince the mildness of the climate: the bogs are adorned by those exquisitely beautiful plants the rhododendron ponticum, and azalea pontica: the olive, the wild olive, the stately wide spreading eastern plane tree, the laurel, the bay, and laurustinus grow in abundance on the shores of the sea of Azof, and the Caspian; and the romantic vales of the Caucasus are perfumed and enlivened with the syringa, the jasmine, the lilac, and the Caucasian rose. From so flattering a specimen it is not to be doubted that future naturalists will gather an abundant harvest of useful and beautiful vegetables in these districts, which have hitherto been very inadequately noticed.

By far the larger part of the Russian dominions in Asia is the wide expanse of Siberia, sloping towards the north and shut up on the south by the snowy summits of the Altaian, and other mountainous chains. As the winters are of great length and severity throughout the whole of this tract, none but the hardiest vegetables are found to inhabit it. The oak, and the hazle, which endure the rigours of a German winter without shrinking, cannot exist in a Siberian climate; dwarfish specimens indeed of each may be traced at the foot of the Altaian mountains, quite across Asia, as far as the banks of the river Amur in Daouria, where, being screened from the northern blasts, they resume their natural size, but all that attempt to penetrate northward become more diminutive as they advance, and soon entirely disappear. Even the common heath, and bog myrtle, which cover the lower parts of Lapland, venture but a very little way eastward of the Uralian mountains. We are not however hence to conclude that the mighty rivers of Siberia pour their everlasting streams through a barren waste of perpetual snow; on the contrary they are bordered with inexhaustible forests of birch, of alder, of lime, of Tatarian maple, of black and white poplar, and aspen, besides millions of noble trees of the pine species, such as the fir, the Scotch pine, the larch, the stone pine, and yew-leaved fir. Nor during their short summer are they destitute of many beautiful plants, that lie concealed under the snow during the greater part of the year; several of the orchis tribe are natives of the Siberian forests, such as cypripedium bulbosum, satyrium epipogium, ophrys monorchis, and

* Pallas, descriptiones plantarum Siberiæ Georgi, Reise im Russischen Reich Gmelin, Flora Siberica.

the

the splendid orchis cucullata: the lily of the valley, the black and white hellebore the Siberian iris, and anemone, blending with the white feathery flower-spike of the spiræa trilobata, thalictroides, altaica, or Kamtschatica, form an assemblage of fragrance and beauty unequalled by many more southern countries.

The Siberian plum, and crab, the mountain ash, the daphne Altaica, and Tatarian honeysuckle, robinia frutescens, Tatarian mulberry, and the Daourian rose form thickets of exquisite beauty, under shelter of which arise the white flowered peony, the gentiana glauca, algida altaica, and several congenerous species, allium sibiricum, amarylis Tatarica, asphodelus Tataricus, lilium Kamtschatense, the *yellow saranne lily*, whose roots are a favourite food with the Tatarian tribes; and a multitude of others, a bare list of whose names would be neither amusing nor instructive. The mosses, and heaths are inhabited by several elegant shrubby plants, of the genera rhododendron, and andromeda, together with rubus chamemorus, and others that are found in similar situations in the north of Europe. Only two plants more need be mentioned, the heracleum panaces, and sibiricum, from the dried stalks of which the natives procure a saccharine efflorescence, whence, by fermentation, and distillation, a coarse ardent spirit is made that enables them to enjoy the supreme beatitude of all the northern nations, drunkenness.

Siberia has hitherto been found to possess scarcely any peculiar genera of plants: and even all the species, of any considerable importance, are those trees which are common to it and the north of Europe.

Zoology.] In the greater part of Asiatic Russia the rein deer, which extends to the furthest east, performs the office of the horse, the cow, and the sheep; if we except Kamchatka, where dogs, like the Pomeranian, are used for carriage. But the south may perhaps be considered as the native country of that noble animal the horse, being there found wild, as well as a species of the ass[11]. The terrible urus or bison is yet found in the Caucasian mountains; and the argali, or wild sheep, is hunted in Siberia. That singular small species of cattle called the musk bull and cow, with hair trailing on the ground, seems peculiar to the north of America[12]. The ibex or rock goat is frequent on the Caucasian precipices; and large stags occur in the mountains near the Baikal, with the musk animal, and wild boar. Wolves and foxes, and bears, of various names and descriptions, are also found. That kind of weazel called the sable affords a valuable traffic by its furs. Some kinds of hares appear little known in other regions; and the castor or beaver is an inmate of the Yenisei. The walrus, or large kind of seal, once termed the sea-horse, is no stranger to the arctic shores; and the common seal extends even to Kamchatka, while the manati, perhaps the mermaid of fable, inhabits the straits of Bering, and the isles between the continents. To enumerate the other animals of this extensive part of Asia would be superfluous, as Siberia is so rich in zoology and botany, that, as Mr. Pennant observes, even the discovery of America has scarcely imparted a greater number of objects to the naturalist.

It will be more apposite to the present purpose to give a brief idea of the most interesting animals. The horses of the Monguls are of singular beauty, some being ribbed like the tiger, and others spotted like the leopard. The nostrils of the foals are commonly slitted, that they may inhale more air in the course. The three great Nomadic nations of the centre of Asia, the Tatars, Monguls, and Mandshurs, have no aversion to horse flesh, which is in their opinion superior to beef; but it is never eaten raw, as fabled, though they sometimes dry it in the sun and air, when it will keep for a long time, and is eaten without further preparation. The *adon*, or stud of a noble Mongul, may contain between three and four thousand horses and mares.

[11] Pennant A. Z. i. 2. See also Dec. Russ. vi. 309.
[12] Ib. 8. It seems a small species of the yak of Tibet and Mongolia.

The

The cattle are of a middling size, and pass the winter in the stepps or desarts. As these nations use the milk of mares, so they employ the cow for draught, a string being passed through a hole made in their nostril. Mr. Bell met a beautiful Tatar girl astride on a cow, attended by two male servants. The sheep are of the broad tailed kind; but the delicately waved lambskins are procured by the cruel practice of opening the womb of the mother.

The best sables are found near Yakutsk and Nershinsk; but those of Kamchatka are the most numerous, and several stratagems are employed to catch or kill the animal, without any injury to the skin, which is sometimes worth ten pounds on the spot. The black foxes are also highly esteemed, one skin being sometimes sufficient to pay the tribute of a village[13]. The rock or ice fox, generally of a white colour, sometimes bluish, is found in great numbers in the eastern Archipelago. This animal rivals the ape in sly tricks and mischief. Other animals pursued for their skins are the marmot, the marten, the squirrel, the ermine, and others of inferior repute. The bear is destroyed by many ingenious methods. The Koriaks contrive a loop and bait hanging from a tree, by which he is suspended. In the southern mountains his usual path is watched, a rope is laid in it with a heavy block at one end, and a noose at the other. When thus entangled by the neck he is either exhausted by dragging so great a weight, or attacking the block with fury he throws it down some precipice, when it seldom fails to drag him to destruction. On the European side of the Uralian chain, where the peasants form bee hives in tall trees, the bear is destroyed in his attempt to seize the honey, by a trap of boards suspended from a strong branch, and slightly attached to the entrance of the hive: the animal finding this platform convenient for his purpose undoes the slight fastening to get at his lucious repast, but is instantly conveyed to a great distance, and remains in the perpendicular of the branch, till he be discovered and shot by the contrivers. Nor must the beaver and the civet cat be omitted, the latter animal being found in the Altaian chain, and tha supreme prominence of Asia which extends to Tibet, though perhaps sometimes confounded by travellers with the musk deer of Tibet; and even the civet cat rather resembles the fox. The elk also abounds in Siberia; the chamois is found on the Caucasian mountains; and several kinds of antelopes in Daouria. The wild boar grows to such a size that the tusks are sometimes said to weigh six hundred pounds, in which case it is no wonder that we hear of the tusks of elephants found in Siberia[14]. The wild horse, ass, and sheep, are minutely described by Pallas; but the various shades of difference between them and the domestic animals are too minute for this rapid survey.

MINERALOGY.] The mineralogy of Siberia is equally fertile, and displays many singular and interesting objects. Peter the Great, who directed his attention to every object of utility, was the first who ordered these remote mines to be explored, which have since supplied great resources of national wealth and industry. For the example of Spain, adduced by theorists against this important branch, without which neither agriculture nor any of the arts could prosper, is an exception and not a rule; and only shews that mismanagement may ruin any advantage. As well might we declaim against agriculture, because the cultivation of rice is unhealthy. No propositions can be more plain than that England has derived her vast manufactures and commerce from her mines of coal, without which material they must long ago have terminated; that the iron of Sweden is the great resource of the state; and that the silver mines of Saxony have been the grand cause of the flourishing agriculture and general prosperity of

[13] Tooke's View, iii. 43.

[14] Tooke, iii. 79. Others, however, with more probability, say they are tusks of the hippopotamus; or of a peculiar kind of elephant, which formerly lived in cold climates.

that country. It is equally clear and simple that if valuable mines were discovered in a barren country, they would not only employ many useful labourers, but the product might be exchanged to advantage for the necessaries or decorations of life, or expended in agricultural improvements. Hence the mines of Siberia have supplied great resources to Russia; while, merely by a miserable form of administration, those of Mexico and Peru have been ranked among the causes of the decline of Spain.

It is worthy of remark, that in the Siberian mines in the southern parts of the Uralian mountains, and in those of Altai, there are ancient works, traditionally said to have been conducted by the Tschouds, an unknown laborious people. Pallas observes, that these Tschouds were neither Tatars nor Monguls, but seem to have been a people extirpated by these nations. Their tombs, in which are often found gold and other precious ornaments, are chiefly placed on agreeable mountains near the river Yenisei, a circumstance which seems to indicate that their chief residence was in this quarter. In one passage* he especially mentions, that the language of the Tschouds was the Finnish, and as the Fins of Permia were formerly celebrated for the riches of their temples, it is probable that these miners were from that country †.

The chief gold mines of Siberia are those of Catherinburg or Ekatherinburg, on the east of the Uralian mountains, about lat. 57°, where an office for the management of the mines was instituted in 1719. The mines of various sorts extend to a considerable distance on the N. and S. of Catherinburg; and the founderies, chiefly for copper and iron, are computed at 105. But the gold mines of Beresof, in this vicinity, were of little consequence till the reign of Elizabeth. The mines of Nershinsk, discovered in 1704, are principally of lead mixed with silver and gold; and those of Kolivan, chiefly in the Schlangenberg, or mountain of serpents, so called by the German miners, began to be worked for the crown in 1748.

The gold is sometimes found native, but generally mingled with various substances, (the *arum larvatum* of Gmelin,) particularly silver, which constitutes the electrum of the ancients. The gold mines of Beresof are the chief in the empire; those of Kolivan and Nershinsk being denominated silver mines, their produce of gold being of much smaller consequence ‡.

The silver is rarely native, but often mingled with gold, as already mentioned; and in the Daourian mountains with lead. That kind called horn silver is also found in the Schlangenberg; and what is called the glassy ore, and those kinds called *fragile* and *nitens* by Gmelin, as also the red arsenical ore, and the cupriferous sulphurated silver ore of Kirwan, mostly found in the Schlangenberg, and other mountains, branching north from those of Altai towards Kolivan.

The mines of Schlangenberg, or the mountain of serpents, are amongst the most remarkable in Siberia. Native silver is sometimes found in pyrites; but, in general, in the hornstein of the Germans, or the genuine petrosilex, that is literally rock flint, for the petrosilex of Wallerius § and Dolomieu is quite another rock, the compact felspar of Werner, fusible by the blow-pipe, while the genuine rock-flint belongs to quartz. In the former no metals are ever found, but many in the latter.

The mines of Schlangenberg are not far from Kolivanskoi, which is far to the south of the town of Kolivan, and is reputed to be the most ancient mining station in

* V. 147. † Voyages de Pallas, tome iii. 82. 140. 320. iv. 400. v. 147.

‡ For Beresof, a few miles N. E. of Catherinburg, see the *Decouvertes Russes*, iv. 162, &c. and the map in that volume. The gold mines are near the river Pyshma, which falls into the Tobol. That entire volume describes Usa, the Bashkirs, and the Uralian chain, instead of being a *Voyage en Perse*, as the running title bears. In 1804 a rich vein of gold was discovered.

§ Hauy shewed me at Paris, a specimen sent by Wallerius himself. It is the rose-coloured compact felspar from Sahlberg.

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the whole Altaian mountains.* In 1744 it first became known to the crown that these mines produced gold and silver. The Russians call the mountain Smeiefskaia Gora. Patrin, and other mineralogists, call the mountain Zmeof, and upon it is a fort called Smeinogorska, being ninety-five versts on the north of the river Irtish, and a hundred and fifty from the Ob. It is a vast mass of mineral covered with schistus, containing silver mingled with gold, copper, plumbago, zinc, arsenic, sulphur. The petrosilex, or *roche cornée* of the French, resembles flint, and sometimes contains bowls of a coarser grain, like sand-stone. It sometimes presents native gold, as well as native silver. Even the copper of Siberia contains gold, as may be observed on analysing the coin struck from it, bearing on one side the head of the empress, and on the other a crowned coat of arms, supported by two of the animals called sables.†

Besides the copper mines in the Uralian mountains, there are also some in those of Altai. The most singular ore is the dendritic, somewhat resembling fern, of a pale colour, and perhaps containing silver. Malachite, or stalactitic copper, is found in the greatest perfection in a mine about 30 miles S. of Catherinburg. What is called the Armenian stone is a blue malachite.[15] The red lead of Siberia is found in the mines of Beresof, on a micaceous sand-stone. ‡ This substance it is well known has disclosed a new metal called chrome.

But the iron mines of Russia are of the most solid and lasting importance, particularly those which supply the numerous founderies of the Uralian mountains. § Yet Russia still imports quicksilver and zinc; and the semi-metals are rare.

Rock-salt is chiefly found near the Ilek, not far from Orenburg. Coal is scarcely known; but sulphur, alum, sal ammoniac, vitriol, nitre, and natron, are found in abundance.

Nor must the gems of Siberia be omitted, of which there is a great variety, particularly in the mountain Adunshollo near the river Argoon, in the province of Nershinsk or Daouria. The diamond has never appeared except in Hindostan and Brasil, where it is always detached; as is the stone chiefly found in Ceylon, and called according to its colour the ruby, sapphire, and oriental topaz. Common topazes are found in Adunshollo, in quadrangular prisms, as is also the jacint. The emerald is unknown; the kind of jad called mother of emerald is a Siberian product; and beryl or aqua marine is found in Adunshollo, but in greater perfection in what are called the gem mines of Moursintsky near Catherinburg, along with the chrysolite. Red garnets abound near the sea of Baikal; and a yellowish-white kind was discovered by Laxman. The opal is said to have been found in the Altaian mountains; probably only the semi-opal, the noble opal seeming peculiar to Hungary. ‖ The ruby-coloured schorl was discovered in the Uralian mountains, by Mr. Herman, at Sarapoulsky, about seven miles from Moursintsky. It is called by Mr. Kirwan the rubellite, being of a delicately fibrous texture, and often when polished presenting the varying splendour of ruby-coloured velvet. The baikalite of the same author is of an olive-green

* Pallas, iv. 315. 371. † Pallas, iv. 461.

[15] Guthrie, Table of Gems. Bee xv. p. 212. In the stepp near Orenburg is a singular mine of copper with petrified trees. Dec. R. iii. 147.

‡ The gangart is quartz, but it often passes to the selvage of the mine, which is sand-stone. Pallas, iii. 167. Our geological language is still deficient, and in mineralogy we often confound the rock of the mountain with the *selvage*, which forms the skirts or borders of the vein; and the gangart or stone which contains or accompanies the mineral itself.

§ Near Mount Emor, or Nemir, not far from the river Yenisei, in the south of Siberia, Dr. Pallas discovered a large mass of native iron. See Dec. Rus. vi. 228, which places it near Krasnojark. In the same volume, p. 189, is a curious account of the rich iron mines near Rybna, S. E. of that place, covered with mineralised trunks of trees.

‖ The Siberian opals are only opalline rock crystals. Guthrie, 54. A curious rock of agate and clay, running as it were into each other, occurs near the river Isett. Dec. R. iv. 371.

colour, and contains a sufficient quantity of magnesia to be arranged in the muriatic class along with the peridot of the French, to which it seems nearly allied. The green felspar of Siberia is a beautiful stone, by the Russians carved into various ornaments. The Daourian mountains between the Onon and the Argoon also produce elegant onyx. The sieve stone is an agatized fungites.[16] The beautiful stones called the hair of Venus and Thetis, being limpid rock crystals containing capillary schorl, red or green, are found near Catherinburg. The alliance stone consists of a greyish porphyry, united, as if glued together, with transparent quartz. Great quantities of malachite have also been found in the Uralian mountains; one piece is said to have weighed 107 poods, or 3852 pounds.*

The beautiful red and green jaspers of Siberia are from the most distant mountains, as already mentioned; and lapis lazuli is found near the Baikal. The Uralian chain also presents fine white marble; and in the numerous primitive ranges there are many varieties of granite and porphyry.

Mineral Waters.] Mineral waters do not abound in Asiatic Russia. There is a fetid sulphureous spring near Sarepta, on the frontier of Europe and Asia, and several others in Siberia. The baths on the Terek, towards the Caucasus, are of a middle temperature: and there are others in the province of Nershinsk; among the Kalmuks to the south of the Altai, in the country sometimes styled Soongaria; and in the neighbourhood of the sea of Baikal. Vitriolic waters or chalybeates, the sour springs of the Germans, are found near Catherinburg, in the midst of the iron mines; nor are they unknown in Daouria. Springs impregnated with naphtha and petroleum occur near the Caspian and the Baikal.

But the chief mineral waters are those in Kamchatka, as described by Lesseps. The hot baths of Natchikin, not far from a volcano in the south of that peninsula, seem not to have been traced to their source, but they fall in a rapid cascade about 300 feet above the baths, benevolently erected by Mr. Kasloff, for the benefit of the Kamchadals, the stream being about a foot and a half deep, and six or seven feet wide. The water is extremely hot, and of a very penetrating nature, seeming to contain vitriolic and nitrous salts, with calcareous earth. On the west side of the gulf of Penjina is a hot spring which falls into the Tavatona, being of a great size and emitting clouds of smoke.

Natural Curiosities.] The chief natural curiosities of Asiatic Russia have already been incidentally mentioned. † The salt lakes near the Caspian, and that sea itself, may be regarded as singular features of nature. The sublime scenes around the Baikal have been already described. Near the river Onon whole mountains are in summer on one side of a lilac colour, from the blossoms of the wild apricot; and on the other of a deep purple, from those of the Daourian rhododendron.[17] The arctic levels of Siberia contrast with the thick forests on the south, which sometimes overhang the roads and rivers with a gloomy and dismal canopy. The numerous volcanoes of Kamchatka are also striking objects; but none of them appear to have been minutely exploded, the severity of the climate being adverse to the curious traveller. Of most of them the smoke is perpetual, but they rarely throw out ashes or lava.

[16] Guthrie, ut supra. * Sauer, 7.

† Near Kungur, on the European side of the Ural mountains, are remarkable caverns, said to extend for ten versts. Dec. R. iv. 407. [17] Dec. Rus. v. 470.

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ISLES BELONGING TO ASIATIC RUSSIA.

THESE were formerly divided into the Aleutian, Andrenovian, and Kurilian groupes, with the Fox isles, which extend to the promontory of Alaska in North America. The Aleutian isles, on the east of Kamchatka, were multiplied by the early navigators as they saw them in different directions, but are now reduced to only two worth notice, Bering's isle and Copper isle. The Andrenovian isles may be regarded as the same with the Fox islands, being the western part of the same range: if they must be distinguished, the Andrenovian form a groupe of six or more isles, about 500 miles to the S. E. of Bering's[18]. It appears that the Fox and Andrenovian isles are a kind of elongation of the American promontory of Alaska, and may more justly be reserved for the description of N. America, late English navigators having dispelled many doubts concerning the real position of these isles. Bering's isle, and Copper isle, are both uninhabited, and do not merit particular description*.

The Kurilian isles extend from the southern promontory of Kamchatka towards the land of Jesso and Japan, being supposed to be about 20 in number, of which the largest are Poro Muschir and Mokanturu. Several of these isles are volcanic; and some contain forests of birch, alder, and pine. Most of them swarm with foxes of various colours. Even after the discoveries of La Perouse it is difficult to distinguish what particular isles in the south of this chain are implied by the Russian appellations. If Matmai be the land of Jesso, Tshikota may be Staten land and Kunassyr the Companies Land: but it seems more probable that this last is Ourop, and that Jesso is Etorpu. The discoveries are too imperfect to admit of decision; and it would even appear that the Russian navigators had, with their usual confusion, described the same islands under different names. The inhabitants of the Kurilian isles seem to be of similar origin with the Kamchadals; and in the interior of some is a people called hairy Kurilian, from what circumstance is not explained †.

[18] Coxe, Russian Disc. 25; but he says the N. E.

* The Andrenovian isles have almost vanished from English maps and charts, which only admit the Aleutian or Fox islands; and the Russian navigators must have erred grossly in their observations.

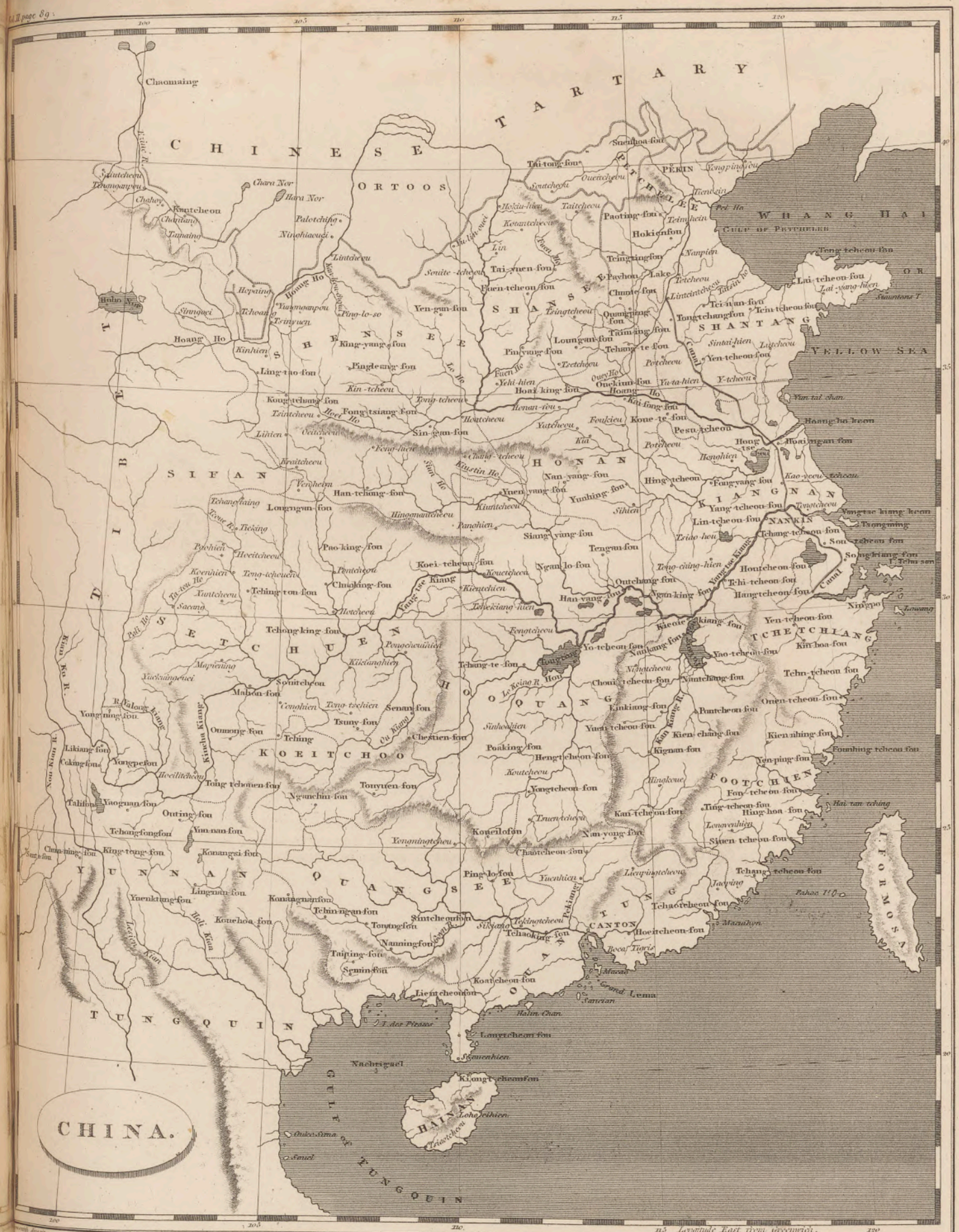
† In the seventh volume of Pallas's *Neve Nordische Beytrage* there is an account of some islands discovered near the northern shore of Siberia lat. 72°, between the mouths of the Iana and Indigirca. The discoverer in 1774 was one Lachofs, whence they were called the Lachofschian islands. Further to the north he observed what he supposed to be a continent, and in which he traced inhabitants; but how a country more northerly than Novaya Zemla could admit of fixed inhabitants remains to be explained, and they were probably only fishers from the northern shores of Siberia.

THE CHINESE EMPIRE.

IN the last century the Chinese emperors, of the Mandshur race, extended this wide empire over many western countries, inhabited by wandering hords of Monguls, Mandshurs, and Tatars; and established such firm influence over Tibet, that the Chinese empire may now be considered as extending from those parts of the Pacific ocean called the Chinese and Japanic seas, to the rivers Sarasou and Sihon in the west*, a space of 81°, which, taking the medial latitude of 30°, will amount to nearly 4200 geographical, or 4900 British miles. From N. to S. this vast empire may be computed from the Uralian mountains, lat. 50°, to the southern part of China, about lat. 21°, being 29° of latitude, 1740 geographical, or nearly 2030 British miles.

DIVISIONS.] This empire therefore consists of three principal divisions; that of China Proper; the territory of the Mandshurs and Monguls, on the north and west; and lastly the singular and interesting region of Tibet or Tibbet. These countries are not only so wide and important, but are so radically different in the form of government, in the manners, and other circumstances, that it will be proper to describe each apart.

* This supposes that the great hord of Kirguses, who only pay homage to China, are included. But the mountains of Belur Tag, and the Palkati or Balkash lake, seem never to have been passed by the Chinese. About 200 British miles of medial length may in this case be subtracted.



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PART I.

CHINA PROPER.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs. — Antiquities.

NAMES.] THIS distinguished region is by the natives styled Tchon-Koue, which signifies the centre of the earth, as they proudly regard other countries as mere skirts and appendages to their own. After the conquest of the northern part by the descendants of Zingis, it was styled Cathay, a name loudly celebrated in travels, poetry, and romance; while the southern part was known by the appellation of Mangi. The origin of the name of China, or Tsin, seems uncertain, but the connexion between this word and the Sinæ of the ancients appears imaginary, the country of the Sinæ being shewn by Gosselyn to be much further to the west. The Mahometan travellers of the ninth century, published by Renaudot, (the authenticity of the work being now undoubted,) call this country Sin, but the Persians pronounce it Tchin [1].

EXTENT, &c.] China Proper extends from the great wall in the north to the Chinese sea in the south, about 1140 geographical, or 1330 British miles. The breadth from the shores of the Pacific to the frontiers of Tibet may be computed at 884 geographical, or nearly 1030 British miles. In square miles the contents have been estimated at 1,297,999, and in acres at 830,719,360 [2]. On the east and south the boundaries are maritime, and to the north they are marked by the great wall and the desart of Shamo; the confines with Tibet on the west seem to be chiefly indicated by an ideal line, though occasionally more strongly marked by mountains and rivers; particularly according to D'Anville the river Yalon, which falls into the Kian-ku, the country of Sifan lying between Tibet and China, on the south of the Eluts of Kokonor.

ORIGINAL POPULATION.] The population of China, seems wholly aboriginal, but the form of the features appears to imply intimate affinity with the Tatars, Mon-

[1] English translation. Remarks, p. 40.

[2] Macartney's Emb. iii. Appen.

guls,

guls, and Mandshurs; yet the Chinese probably constitute a fourth grand division, not strictly derived from either of these barbaric races.

Progressive Geography.] The progressive geography of China, as known to the western nations, is not of ancient date, whether with D'Anville we suppose the Sinæ to have been in Cochin China, or with Gosselin place them in the western part of Siam. The most ancient external relation which we possess is that of the two Mahometan travellers in the ninth century, who surprise us with accounts of barbarism and cannibalism little to be expected: but the Arabs are so fond of fables, that implicit credit may safely be withheld from several passages. Yet these travellers impart high ideas concerning the Chinese empire, and mention Canfu, supposed to be Canton, as a city of great trade, while the emperors resided at Camdan, which seems to be the city also called Nankin, or the Southern Court, in contradistinction from Pekin or the Northern Court. This wide empire continued, however, obscure to the inhabitants of Europe till the travels of Marco Polo appeared, in the end of the thirteenth century. Yet the work of this traveller remained so unknown that Pope Pius II. in his description of Asia [3], is contented with the more imperfect account by Nicola Conti, a Venetian traveller of his own time who visited Cathay *. Haitho the Armenian, who wrote his book on the Tatars about the year 1306, begins with an account of Cathay; and Oderic of Portenau described his voyage to China 1318 [4]. Our Sir John Mandeville visited China about 1340; and Pegolotti gave directions for the route in 1335 [5]. But in the following century there seems to have been a strange and unaccountable intermission of intercourse and research, if we except the travels of Nicola Conti above mentioned; and so perishable was the knowledge acquired as to have escaped even a learned pontiff. After this relapse of darkness, the rays of more genuine and authentic knowledge gradually emerged by the discovery of the Cape of Good Hope, and the subsequent enterprizes of the Portuguese.

The Chinese history is said to commence, in a clear and constant narration, about 2500 years before the birth of Christ. The founder of the monarchy is Fo-Hi; but the regular history begins with Yao [6]. The dynasties or families who have successively held the throne amount to 22, from the first named Hia, to the present house of Tsing [7]. Yu, the first emperor of the house of Hia, is said to have written a book on agriculture, and to have encouraged canals for irrigation; and it is also asserted that he divided the empire into nine provinces. The ancient revolutions of China would little interest the general reader. The dynasties, as usual, generally terminate in some weak or wicked prince, who is dethroned by an able subject. Sometimes the monarchy is divided into that of the south, which is esteemed the ruling and superior inheritance; and that of the north. The emperor Tai Tsong, who reigned in the seventh century after Christ, is regarded as one of the greatest princes who have filled the Chinese throne. The Mandshurs to the north of China repeatedly influenced the

[3] P. 18—28. Edit. Paris 1534. Pius wrote about 1450.

* Cathay had been before faintly known to Europeans, from the travels of John de Plano Carpini, 1245, and of Rubruquis, 1251. The account of the latter in particular is interesting, as he visited Cathay by the route of Karakum, the capital of the Mongul empire, placed by D'Anville on the Ongui Muren, but by Fischer in his history of Siberia on the east side of the river Orchon, about 150 British miles to the N. W.

[4] Forster's Disc. in the North, p. 147.

[5] Ib. 150. The original is to be found in a work entitled *Della Decima, e delle altre gravezze. Lisbona e Lucca, Florence*, 1766, 3 vols. 4to. But it is in the third volume of this curious and interesting work, which developes the history of commerce in the middle ages; and that volume is often wanting. Concerning Francesco Balducci Pegolotti, see tom. ii. p. 61—75, &c.

[6] Du Halde, iii. 7. Haye, 1756. 4to. According to De Guignes, iv. 373, the *Seki* or *Su-ki*. Historical Memoirs, composed by Sema-taien form the sole monument of ancient Chinese history.

[7] Ib. i. 266, &c.

succession

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succession to the empire; but the Monguls under Zingis and his successors seized the five northern provinces. Hoaitsing, who began to reign A. D. 1627, was the last prince of the Chinese dynasties. Some unsuccessful wars against the Mandshurs had rendered this emperor melancholy and cruel; and insurrections arose, the most formidable being conducted by two chiefs Li and Tchang. The former besieged Pekin, which was surrendered by the general discontent, and the emperor retiring to his garden first slew his daughter with his sabre, and afterwards hanged himself on a tree, having only lived 36 years. The usurper seemed firmly seated on the throne, when a prince of the royal family invited the Mandshurs, who advanced under their king Tsong Te. The Mandshur monarch had scarcely entered China when he died; and his son of six years of age was declared emperor, the regency being entrusted to his uncle. This young prince, named Chun Tchig, was the first emperor of the present dynasty, and has been followed by four princes of the same Mandshur family.

ANTIQUITIES.] Among the remains of Chinese antiquity may be mentioned the coins of the ancient dynasties, of which arranged cabinets are formed by the curious natives. Du Halde has published many of these ancient coins, and to his work the reader is referred. There are also several pagodas, or ornamented towers, sometimes erected in commemoration of great events; many temples, which are low buildings of a different construction from the pagodas; and some triumphal arches, which boast considerable antiquity.

But the chief remain of ancient art in China is that stupendous wall extending across the northern boundary [8]. This work, which is deservedly esteemed among the grandest labours of art, is conducted over the summits of high mountains, some of which rise to the height of 5225 feet, across the deepest vales, over wide rivers by means of arches; and in many parts is doubled or trebled to command important passes: and at the distance of almost every hundred yards is a tower or massy bastion. The extent is computed at 1500 miles; but in some parts of smaller danger it is not equally strong or complete, and towards the N. W. only a rampart of earth. For the precise height and dimensions of this amazing fortification the reader is referred to the work already quoted, whence it appears that near Koopekoo the wall is 25 feet in height, and at the top about 15 feet thick: some of the towers, which are square, are 48 feet high, and about 40 feet wide. The stone employed in the foundations, angles, &c. is a strong grey granite; but the greatest part consists of bluish bricks, and the mortar is remarkably pure and white.

Sir George Staunton considers the era of this great barrier as absolutely ascertained, and he asserts that it has existed for two thousand years. In this asseveration he seems to have followed Du Halde, who informs us that "this prodigious work was constructed 215 years before the birth of Christ, by the orders of the first emperor of of the family of Tsin, to protect three large provinces from the irruptions of the Tatars [9]." But in the history of China, contained in his first volume, he ascribes this erection to the second emperor of the dynasty of Tsin, namely Chi Hoang Ti; and the date immediately preceding the narrative of this construction is the year 137 before the birth of Christ [10]. Hence suspicions may well arise, not only concerning the epoch of this work, but even with regard to the purity and precision of the Chinese annals in general. Mr. Bell, who resided for some time in China, and whose travels are deservedly esteemed for the accuracy of their intelligence, assures us [11] that this wall was built about 600 years ago, (that is about the year 1160,) by one of the emperors, to prevent the frequent incursions of the Monguls, whose numerous cavalry used to ravage the provinces, and escape before an army could be assembled to

[8] Sir G. Staunton, ii. 360. 8vo. [9] Tome ii. p. 54. [10] Tome i. 340. [11] Travels, ii. 112. 8vo.

oppose them. Renaudot observes that no oriental geographer, above 300 years in antiquity, mentions this wall [12]: and it is surprising that it should have escaped Marco Polo; who, supposing that he had entered China by a different route, can hardly be conceived, during his long residence in the north of China, and in the country of the Monguls, to have remained ignorant of so stupendous a work *. Amidst these difficulties, perhaps it may be conjectured that similar modes of defence had been adopted in different ages; and that the ancient rude barrier having fallen into decay, was replaced, perhaps after the invasion of Zingis, by the present erection, which even from the state of its preservation can scarcely aspire to much antiquity.

[12] Ut supra, 137.

* Some, however, deny that he entered China.

CHAPTER

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CHAPTER II.

POLITICAL GEOGRAPHY.

Religion.—Ecclesiastical Geography.—Government.—Laws.—Population.—Colonies.—Army.—Navy.—Revenues.—Political Importance and Relations.

RELIGION.] ACCORDING to Du Halde the ancient Chinese worshipped a supreme being, whom they styled Chang Ti, or Tien, which is said to imply the spirit which presides over the heavens; but in the opinion of others is only the visible firmament. They also worshipped subaltern spirits, who presided over kingdoms, provinces, cities, rivers, and mountains. Under this system, which corresponds with what is called Shamanism, sacrifices were offered on the summits of hills. The sect of Tao See was founded on principles similar to those of Epicurus; but as the idea of death tended to disturb their boasted tranquillity, they invented a potion which was to confer imaginary immortality.

"The primitive religion of China, or at least, those opinions, rites, and ceremonies that prevailed in the time of Confucius, (and before that period all seems to be fable and uncertainty,) may be pretty nearly ascertained from the writings that are ascribed to that philosopher. He maintains in his physics, that "out of nothing there cannot possibly be produced any thing;—that material bodies must have existed from all eternity, that the *cause* (*lee*, *reason*), or principle of things, must have had a co-existence with the things themselves; that, therefore, this cause is also eternal, infinite, indestructible, without limits, omnipotent and omnipresent;—that the central point of influence (*strength*) from whence this cause principally acts, is the blue firmament (*tien*) from whence its emanations spread over the whole universe;—that it is, therefore, the supreme duty of the prince, in the name of his subjects, to present offerings to *tien*, and particularly at the equinoxes, the one for obtaining a propitious seed-time, and the other a plentiful harvest *."

About A. D. 65 the sect of Fo was introduced into China from Hindostan. The name was derived from the idol Fo, (supposed to be the Boodh of Hindostan,) and the chief tenets are those of the Hindoos, among which is the Metempsycosis, or transition of souls from one animal to another. The priests are denominated Bonzes, and Fo is supposed to be gratified by the favour shewn to his servants. Many subordinate idols are admitted; but as the Jesuits found the followers of Fo the most adverse to Christianity, they have absurdly enough called them atheists.

Since the fifteenth century many Chinese literati have embraced a new system, which acknowledges an universal principle, under the name of Taiki, seeming to correspond with the soul of the world of some ancient philosophers. This opinion may indeed deserve the name of atheism; nor is it unusual to find ingenious reasoners so far disgusted with gross superstitions as to fall into the opposite extreme of absurdity†.

* Barrow's China, p. 450.

† It must however be remembered that even these literati admit the existence of gods of various classes, emanated from the soul of the world. Hence they are in fact polytheists, who do not admit a supreme intelligent being

But such opinions are confined to very few; and the Chinese are so far from being atheists that they are in the opposite extreme of polytheism, believing even in petty demons who delight in minute acts of evil, or good. There is properly no order of priests, except the Bonzes of the sect of Fo; nor of course can any high priest aspire to the imperial power. The sect of Fo, and that of Lao Kian, which is the same with that of the Tai See, admit of monasteries. The noted festival of lantherns is, according to Osbek, celebrated in honour of the god of fire, to avert the danger of conflagration. The Chinese temples are always open; nor is there any subdivision of the month known in the country [1].

GOVERNMENT.] The government of China is well known to be patriarchal. The emperor is indeed absolute; but the examples of tyranny are rare, as he is taught to regard his people as his children, and not as his slaves. The stability of the government, in all its essential and even minute forms and customs, justly astonishes those who are the most versed in history. It arises from a circumstance unknown in any other government, the admission and practice of the principle asserted by Lord Bacon, that *knowledge is power*. For all the officers of government pass through a regular education, and a progress of rank, which are held indispensable. Of these officers, who have been called mandarins, or commanders, by the Portuguese, but in the language of the country *Euans*, there are nine classes, from the judge of the village to the prime minister. The profession requiring a long and severe course of study, the practice of government remains, like that of medicine, unshaken by exterior events; and while the imperial throne is subject to accident and force, the remainder of the machine pursues its usual circle. In so vast an empire, with a computed population of more than 230,000,000, perhaps the stability of the state is incompatible with much freedom; yet the ideas of an European are shocked by the frequent use of the rod, a paternal punishment which would, in his eyes, appear the most degrading species of slavery. The soldiers, however, shew the greatest tenderness to the people; and every sentence of death must be signed by the emperor. It is impossible to fix any general criterion of human opinions, which vary according to minute, and sometimes invisible circumstances; and thus in China the prime minister may be chastened with rods, and acknowledge no mark of slavery in what he regards as a mere fatherly admonition.

The governors of the provinces have great and absolute power, yet rebellions are not unfrequent. Bribery is also an universal vice; and the Chinese government, like many others, is more fair in the theory than in the practice. Yet the amazing population, and the general ease and happiness of the people, evince that the practice of the government must be more beneficial than any yet known among mankind.

LAWS.] The Chinese laws are ancient, but numerous*; and edicts of the reigning dynasty have restrained the mandarins within stricter limits of duty. The state of property has not been so completely illustrated as was to have been wished, but as far as I have been able to learn from persons who have visited China, it is respected, but not permitted to accumulate. For, independently of the estates being apportioned among the sons, the largest are often seized by the emperor and divided as pensions or rewards. If a proprietor build a splendid house, he is amerced by the government on the pretext that his wealth cannot be better employed than in contributing to the public revenue.

"In China," says Mr. Barrow, "the laws regarding property are insufficient to give it security: hence, the talent of invention is there seldom exercised beyond suggesting the means of providing for the first necessities and the most pressing wants.

[1] Pauw Recherches philosophiques sur les Egyptiens, et les Chinois. Tome ii. 217.

* See Staunton's translation of the *Ta Tsing Leu Lee*, or Laws of China.

A man,

A man, indeed, is afraid here to be considered as wealthy, well knowing that some of the rapacious officers of the state would find legal reasons to extort his riches from him*."

And in another passage the same sensible writer observes, "that by the laws relating to property, women in China, as in ancient Rome, are excluded from inheriting, where there are children, and from disposing of property; but where there are no male children, a man may leave, by will, the whole of his property to the widow. The reason they assign for women not inheriting is, that a woman can make no offering to deceased relations in the hall of ancestors; and it is deemed one of the first ideal blessings of life for a man to have some one to look up to, who will transmit his name to future ages, by performing, at certain fixed periods, the duties of this important ceremony. All their laws indeed respecting property, as I have already observed, are insufficient to give it that security and stability which alone can constitute the pleasure of accumulating wealth. The avarice of men in power may overlook those who are in moderate circumstances, but the affluent rarely escape their rapacious grasp. In a word, although the laws are not so perfect as to procure for the subject general good, yet neither are they so defective as to reduce him to that state of general misery, which could only be terminated in a revolution. The executive administration is so faulty, that a man in office generally has it in his power to govern the laws, which makes the measure of good or evil depend greatly on his moral character†."

Population.] The population of China has been a topic ofconsiderable debate. Pauw, a bold and decisive assertor, and a declared enemy of the Jesuits, has attacked all their descriptions of China. He observes, from Du Halde, that when the missionaries proceeded through the empire, to prepare their maps, they found in the greater part of the large governments countries of more than 20 leagues, little peopled, almost uncultivated, and often so wild that they are quite uninhabitable. Pauw also mentions the abundance of tigers, and the existence of the Chinese savages in the extensive forests; and he supposes that the population is exaggerated when it is computed at 82,000,000‡. In so wide an empire most of the features are on a large scale, nor can human industry overcome certain impediments of nature, as ridges of rocks, barren heaths, and extensive swamps, in certain positions; and in the north of China large forests are indispensably preserved for the sake of fuel. On a smaller scale such obstacles to universal population are found even in the most fertile countries, and Bagshot heath, with perhaps several tents of gypsies, occur near the capital of England. Civil wars, which have repeatedly raged in China, may also desolate parts of a country for a long period of time, while the inhabitants crowd to the cities and places of defence. As it would be absurd to suppose that all China consists of cultivable land, so it would be equally absurd to deny that the population has impressed every traveller with astonishment, and with ideas totally different from those of Pauw, who decided in his cabinet, in a spirit of enmity against his materials; and who seems to have forgotten that the want of cultivation in some districts is balanced by the numbers residing on the waters, millions of families passing their whole existence in boats on the numerous rivers, lakes, and canals. The recent English embassy was astonished at the excess of population; and Sir George Staunton has published the following table, from the information of a mandarin of high rank, who had every opportunity of exact knowledge.

* Barrow's China, p. 177. † P. 379. ‡ Recherches, i. 78.

Table of the population and extent of China Proper, within the great wall. Taken in round numbers from the statements of Chow-la-Zhin.

PROVINCES.	POPULATION.	SQUARE MILES.	ACRES.
Pe-che-lee - - - - - -	38,000,000	58,949	37,727,360
Kiang-nan, two provinces -	32,000,000	92,961	59,495,040
Kiang-See - - - - -	19,000,000	72,176	46,192,640
Tche-kiang - - - - -	21,000,000	39,150	25,056,000
Fo-chen - - - - - -	15,000,000	53,480	34,227,200
Hou-pe } Hou-quang -	14,000,000 }	144,770	92,652,800
Hou-nan }	13,000,000 }		
Hon-an - - - - - - -	25,000,000	65,104	41,666,560
Shan-Tung - - - - - -	24,000,000	65,104	41,666,560*
Shan-see - - - - - - -	27,000,000	55,268	35,371,520
Shen-see - - - - - - -	18,000,000 }	154,008	98,565,120
Kan-fou - - - - - - -	12,000,000 }		
Se-chuen - - - - - - -	27,000,000	166,800	106,752,000
Canton - - - - - - - -	21,000,000	79,456	50,851,840
Quang-see - - - - - - -	10,000,000	78,250	50,080,000
Yu-nan - - - - - - -	8,000,000	107,969	69,100,160
Koei-cheou - - - - - -	9,000,000	64,554	41,314,560
	333,000,000	1,297,999	830,719,360

How far this table may deserve implicit credit, may be doubted by those who know the difficulty of such researches, even in the most enlightened countries of Europe.

This subject being however one of the most interesting in the whole science of geography, some further illustrations extracted from a recent work † shall be here subjoined.

" I have now to mention a subject on which much has already been written by various authors, but without the success of having carried conviction into the minds of their readers, that the things which they offered as facts were either true or possible; I allude to the populousness of this extensive empire. That none of the statements hitherto published are strictly true, I am free to admit, but that the highest degree of populousness that has yet been assigned may be possible, and even probable, I am equally ready to contend. At the same time, I acknowledge, that prepared as we were, from all that we had seen and heard, and read on the subject, for something very extraordinary; yet, when the above statement was delivered, at the request of the embassador, by *Chou-ta-gin*, as the abstract of a census that had been taken the preceding year, the amount appeared so enormous as to surpass credibility. But as we had always found this officer a plain, unaffected, and honest man, who, on no occasion, had attempted to deceive or impose on us, we could not consistently consider it in any other light than as a document drawn up from authentic materials; its inaccuracy, however, was obvious at a single glance, from the several sums being given in round millions.

" . . . . . Considering then the whole surface of the Chinese dominions within the great wall to contain 1,297,998 square miles, or 830,716,360 English acres, and the population to amount to 333,000,000, every square mile will be found to contain two hundred and fifty-six persons, and every individual might possess two acres and a half of land. Great Britain is supposed to average about one hundred and twenty persons on one square mile, and that to each inhabitant there might be assigned a portion of five

* This identic repetition must be erroneous.

† Barrow's Travels in China, London, 1804, 4to. p. 574.

acres

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acres, or to each family five and twenty acres. The population of China, therefore, is to that of Great Britain as 256 to 120, or in a proportion somewhat grea tr than two to one; and the quantity of land that each individual in Great Britain might possess is just twice as much as could be allowed to each individual of China. We have only then to enquire if Britain, under the same circumstances as China, be capable of supporting twice its present population, or which is the same thing, if twelve and a half acres of land be sufficient for the maintenance of a family of five persons? Two acres of choice land sown with wheat, under good tillage, may be reckoned to average, after deducting the seed, 60 bushels, or 3600 pounds, which every baker knows would yield 5400 pounds of bread, or three pounds a day to every member of the family for the whole year. Half an acre is a great allowance for a kitchen garden, and potatoe bed. There would still remain ten acres, which must be very bad land, if besides paying the rent and taxes, it did not keep three or four cows; and an industrious and managing family would find no difficulty in rearing as many pigs, and as much poultry as would be necessary for home consumption, and for the purchase of clothing and other indispensable necessaries. If then the country was pretty equally partitioned out in this manner; if the land was applied solely to produce food for man; if no horses nor superfluous animals were kept for pleasure, and few only for labour; if the country was not drained of its best hands in foreign trade, and in large munufactures; if the carriage of goods for exchanging with other goods was performed by canals and rivers, and lakes, all abounding with fish; if the catching of these fish gave employment to a very considerable portion of the inhabitants; if the bulk of the people were satisfied to abstain almost wholly from animal food, except such as is most easily procured, that of pigs, and ducks, and fish; if only a very small part of the grain raised was employed in the distilleries, but was used as the staff of life for man; and if this grain was of such a nature as to yield twice, and even three times, the produce that wheat will give on the same space of ground; if, moreover, the climate was so favourable as to allow of two such crops every year—if, under all these circumstances, twelve and a half acres of land would not support a family of five persons, the fault could only be ascribed to idleness or bad management.

" Let us then, for a moment, consider that these or similar advantages operate in China; that every product of the ground is appropriated solely for the food and clothing of man; that a single acre of land sown with rice, will yield a sufficient quantity for the consumption of five people for a whole year, allowing to each person two pounds a-day, provided the returns of his crop are from twenty to twenty-five for one, which are considered as extremely moderate, being frequently more than twice this quantity; that in the southern provinces two crops of rice are produced in the year, one acre of which I am well assured, with proper culture, will afford a supply of that grain even for ten persons, and that an acre of cotton will clothe two or three hundred persons, we may justly infer that, instead of twelve acres to each family, half that quantity would appear to be more than necessary; and safely conclude, that there is no want of land to support the assumed population of three hundred and thirty three millions. This being the case, the population is not yet arrived at a level with the means which the country affords of subsistence.

" There is, perhaps, no country where the condition of the peasantry may more justly be compared with that of China than Ireland. This island, according to the latest survey contains about 17,000,000 English acres, 730,000 houses, and 3,500,000 souls so that, as in Great Britain, each individual averages very nearly five acres, and every family five and twenty. An Irish cottager holds seldom more than an Irish acre of land, or one and three quarters English, nearly, in cultivation, with a cow's grass, for which he pays a rent from two to five pounds. Those on Lord

Macartney's

Macartney's estate at Lissanore have their acre which they cultivate, in divisions, with oats, potatoes, kale, and a little flax; with this they have besides the full pasturage of cow all the year upon a large waste, not overstocked, and a comfortable cabin to inhabit, for which each pays the rent of three pounds. The cottager works, perhaps, three days in the week, at nine-pence a-day; if, instead of which, he had a second acre to cultivate, he would derive more benefit from his produce than from the product of his three days labour *per* week, that is to say, provided he would expend the same labour in its tiliage. Thus then, supposing only half of Ireland in a state of cultivation, and the other half pasturage, it would support a population more than three times that which it now contains; and as a century ago it had no more than a million of people, so within the present century, under favourable circumstances, it may increase to ten millions. And it is not unworthy of remark, that this great increase of population in Ireland has taken place since the introduction of the potatoe, which gives a never failing crop.

"I am aware that such is not the common opinion which prevails in this country, neither with regard to Ireland or China; on the contrary, the latter is generally supposed to be overstocked with people; that the land is insufficient for their maintenance, and that the cities stand so thick one after the other, especially along the grand navigation between Pekin and Canton, that they almost occupy the whole surface. A person in the suite of Lord Macartney states as a fact, that he saw tea and rice growing on the banks of the *Pei-ho*, between the thirty-ninth and fortieth parallels of latitude, two articles of the culture of which, in the whole province of *Pe-tche-lee*, they know no more than we do in England; and he ignorantly and impertinently talks of the shocking ideas the Chinese entertained of English cruelty, on seeing one of the guard receive a few lashes, when, not only the common soldiers, but the officers of this nation are flogged most severely with the bamboo on every slight occasion. If Doctor Vincent, from reading his book, was really persuaded that the cities of China were so large and so numerous, that they left not ground enough to subsist the inhabitants, I could wish to recall his attention for a few moments to this subject, as opinions sanctioned by such high authority, whether right or wrong, are sure in some degree to bias the public mind. We have seen, that if China be allowed to contain three hundred and thirty-three millions of people, the proportion of its population is only just double that of Great Britain. Now, if London and Liverpool, and Birmingham and Glasgow, and all the cities, towns, villages, gentlemen's villas, farm-houses, and cottages in this island were doubled, I see no great inconvenience likely to arise from such duplication. The unproductive land in the shape of gentlemen's parks and pleasure grounds, would, I presume, be much more than sufficient to counterbalance the quantity occupied by the new erections; and the wastes and commons would, perhaps, be more than enough to allow even a second duplication. But the population of an English city is not to be compared with, or considered as similar to, the populousness of a Chinese city, as will be obvious by considering the two capitals of these two empires. Pekin, according to a measurement, supposed to be taken with great accuracy, occupies a space of about fourteen square miles. London, with its suburbs, when reduced to a square, is said to comprehend about nine square miles. The houses of Pekin rarely exceed a single story; those of London are seldom less than four; yet both the Chinese and the Missionaries who are settled in this capital, agree that Pekin contains three millions of people; while London is barely allowed to have one million. The reason of this difference is, that most of the cross streets of a Chinese city are very narrow, and the alleys branching from them so confined, that a person may place one hand on one side and the other on the other side as he walks along; that the houses, in general, are very small, and that each house contains six, eight,

eight, or ten persons, sometimes twice the number. If, therefore, fourteen square miles of buildings in China contain three millions of inhabitants, and nine square miles of buildings in England one million, the population of a city in China will be to that of a city in England as twenty-seven to fourteen, or very nearly as two to one; and the former, with a proportion of inhabitants double to that of the latter, will only have the same proportion of buildings: so that there is no necessity of their being so closely crowded together, or of their occupying so great a portion of land, as to interfere with the quantity necessary for the subsistence of the people.

"I have been thus particular, in order to set in its true light a subject that has been much agitated and generally disbelieved. The sum total of three hundred and thirty three millions is so enormous, that in its aggregate form it astonishes the mind, and staggers credibility; yet we find no difficulty in conceiving that a single square mile in China may contain two hundred and fifty-six persons, especially when we call to our recollection the United Provinces of Holland, which have been calculated to contain two hundred and seventy inhabitants on a square mile. And the United Provinces have enjoyed few of the advantages favourable to population, of which China, for ages past has been in the uninterrupted possession.

"The materials for the statement given by Father Emiot of the population of China appears to have been collected with care. The number of souls in 1760, according to this statement was - - - - - - - - - - 196,837,977

In 1761 - - - - - - - - - - - 198,214,553

Annual increase, 1,376,576

This statement must however be incorrect, from the circumstance of some millions of people being excluded who have no fixed habitation, but are constantly changing their position on the inland navigation of the empire, as well as all the islanders of the Archipelago of *Chu-san* and of Formosa. Without, however, taking these into consideration, and by supposing the number of souls in 1761, to amount to 198,214,553, there ought to have been in the year 1793, by allowing a progressive increase, according to a moderate calculation in political arithmetic, at least 280,000,000 souls.

"Whether this great empire, the first in rank both in extent and population, may or may not actually contain 333 millions of souls, is a point that Europeans are not likely ever to ascertain. That it is capable of subsisting this and a much greater population has, I think, been sufficiently proved. I know it is a common argument with those who are not willing to admit the fact, that although cities and towns and shipping may be crowded together in an astonishing manner, on and near the grand route between the capital and Canton, yet that the interior parts of the country are almost deserted. By some of our party going to *Chu-fan*, we had occasion to see parts of the country remote from the common road, and such parts happened to be by far the most populous in the whole journey. But independent of the small portion of country seen by us, the western provinces, which are most distant from the grand navigation, are considered as the granaries of the empire; and the cultivation of much grain, where few cattle and less machinery are used, necessarily implies a corresponding population. Thus we see from the above table, that the surplus produce of the land remitted to Pekin from the provinces of

		Oz. Silver.
Honan	remote from the grand navigation, were	3,213,000
Shan-see		3,722,000
Shen-see		2,040,000

Whilst those of

Pe-tche-lee		3,036,000
Shan-tung	on the grand navigation, were	3,600,000
Tche-kiang		3,810,000

chiefly in rice, wheat and millet. There are no grounds therefore for supposing that the interior parts of China are desarts.

" There are others again who are persuaded of the population being so enormous, that the country is wholly inadequate to supply the means of subsistence; and that famines are absolutely necessary to keep down the former to the level of the latter. The loose and general way in which the accounts of the missionaries are drawn up certainly leave such an impression; but as I have endeavoured to shew that such is far from being the case, it may be expected I should also attempt to explain the frequency of those disastrous famines which occasionally commit such terrible havock in this country. I am of opinion then, that three principal reasons may be assigned for them. First, the equal division of the land: Secondly, the mode of cultivation: and Thirdly, the nature of the products.

" If, in the first place, every man has it in his option to rent as much land as will support his family with food and clothing, he will have no occasion to go to market for the first necessities; and such being generally the case in China, those first necessities find no market, except in the large cities. When the peasant has brought under tillage of grain as much land as may be sufficient for the consumption of his own family, and the necessary surplus for the landlord, he looks no further; and all his neighbours having done the same, the first necessities are in fact, unsaleable articles, except in so far as regards the demand of large cities, which are by no means so close upon one another as has been imagined. A surplus of grain is likewise less calculated to exchange for superfluities or luxuries than many other articles of produce. This being the case, if, by any accident, a failure of the crops should be general in a province, it has no relief to expect from the neighbouring provinces, or any supplies from foreign countries. In China there are no great farmers who store their grain to throw into the market in seasons of scarcity. In such seasons the only resource is that of the government opening its magazines, and restoring to the people that portion of their crop which it had demanded from them as the price of its protection. And this being originally only a tenth part, out of which the monthly subsistence of every officer and soldier had already been deducted, the remainder is seldom adequate to the wants of the people. Insurrection and rebellion ensue, and those who may escape the devouring scourge of famine, in all probability, fall by the sword. In such seasons a whole province is sometimes half depopulated; wretched parents are reduced, by imperious want, to sell or destroy their offspring, and children to put an end, by violence, to the sufferings of their aged and infirm parents. Thus the equal division of land, so favourable to population in seasons of plenty, is just the reverse when the calamity of a famine falls upon the people.

" In the second place, a scarcity may be owing to the mode of cultivation. When I mention that two-thirds of the small quantity of land under tillage are cultivated with the spade or the hoe, or otherwise by manual labour, without the aid of draught cattle or skilful machinery, it will readily be conceived how very small a portion each family will be likely to employ every year; certainly not one-third part of his average allowance.

" The third cause of famines may be owing to the nature of the products, particularly to that of rice. This grain, the staff of life in China, though it yields abundant returns in favourable seasons, is more liable to fail than most others. A drought in its

its early stages withers it on the ground; and an inundation when nearly ripe, is equally destructive. The birds and the locusts, more numerous in this country than an European can well conceive, infest it more than any other kind of grain. In the northern provinces, where wheat, millet and pulse are cultivated, famines more rarely happen; and I am persuaded that if potatoes and Guinea corn (Zea-Mays) were once adopted as the common vegetable food of the people, those direful famines that produce such general misery would entirely cease, and the increase of population be as rapid as that of Ireland. This root in the northern provinces, and this grain in the middle and southern ones, would never fail them. An acre of potatoes would yield more food than an acre of rice, and twice the nourishment. Rice is the poorest of all grain, if we may judge from the slender and delicate forms of all the people who use it as the chief article of their sustenance; and potatoes are just the contrary *.

"As Dr. Adam Smith observes, 'The chairmen, porters, and coal-heavers in London, and those unfortunate women who live by prostitution †, the strongest men and 'the most beautiful women perhaps in the British dominions, are said to be, the 'greater part of them, from the lowest rank of the people in Ireland who are ge-'nerally fed with this root; no food can afford a more decisive proof of its nourish-'ing quality, or of its being peculiarly suitable to the health of the human constitution.' The Guinea corn requires little or no attention after the seed is dropped into the ground; and its leaves and juicy stems are not more nourishing for cattle than its prolific heads are for the sustenance of man.

"Various causes have contributed to the populousness of China. Since the Tartar conquest it may be said to have enjoyed a profound peace; for in the different wars and skirmishes that have taken place with the neighbouring nations on the side of India, and with the Russians on the confines of Siberia, a few Tartar soldiers only have been employed. The Chinese army is parcelled out as guards for the towns, cities, and villages; and stationed at the numberless posts on the roads and canals. Being seldom relieved from the several guards, they all marry and have families. A certain portion of land is allotted for their use, which they have sufficient time to cultivate. As the nation has little foreign commerce there are few seamen; such as belong to the inland navigations are mostly married. Although there be no direct penalty levied again such as remain batchelors, as was the case among the Romans when they wished to repair the desolation that their civil wars had occasioned, yet public opinion considers celibacy as disgraceful, and a sort of infamy is attached to a man who continues unmarried beyond a certain time of life. And although in China the public law be not established of the *Jus trium liberorum*, by which every Roman citizen having three children was entitled to certain privileges and immunities, yet every male child may be provided for, and receive a stipend from the moment of his birth, by his name being enrolled on the military list. By the equal division of the country into small farms, every peasant has the means of bringing up his family, if drought and inundation do not frustrate his labour; and the pursuits of agriculture are more favourable to health, and consequently to population, than mechanical employments in crowded cities and large manufactories, where those who are doomed to toil are more liable to become the victims of disease and debauchery, than such as are exposed to the free and open air, and to active and wholesome labour. In China there are few of such manufacturing cities. No great capitals are here employed in

* The very great advantage of a potatoe crop, as I before observed, is the certainty of its success. Were a general failure of this root to take place, as sometimes happens to crops of rice, Ireland in its present state, would experience all the horrors that attend a famine in some of the provinces of China."

† Not above a sixth part of the prostitutes is of Irish growth.

any one branch of the arts. In general each labours for himself in his own profession. From the general poverty that prevails among the lower orders of people, the vice of drunkenness is little practised among them. The multitude, from necessity, are temperate in their diet to the last degree. The climate is moderate, and except in the northern provinces, where the cold is severe, remarkably uniform, not liable to those sudden and great changes in temperature, which the human constitution is less able to resist, than the extremes of heat or cold when steady and invariable, and from which the inconveniences are perhaps no where so severely felt as on our own island. Except the small-pox and contagious diseases that occasionally break out in their confined and crowded cities, they are liable to few epidemical disorders. The still and inanimate kind of life which is led by the women, at the same time that it is supposed to render them prolific, preserves them from accidents that might cause untimely births. Every woman suckles and nurses her own child.

" The operation of these and other favourable causes that might be assigned, in a country that has existed under the same form of government, and preserved the same laws and customs for so many ages, must necessarily have created an excess of population unknown in most other parts of the world, where the ravages of war, several times repeated in the course of a century, or internal commotions, or pestilential disease, or the effects of over-grown wealth, sometimes sweep away one-half of a nation within the usual period allotted to the life of man.

' What a grand and curious spectacle,' as Sir George Staunton observes, ' is here exhibited to the mind, of so large a proportion of the whole human race, connected together in one great system of policy, submitting quietly and through so considerable an extent of country to one great sovereign: and uniform in their laws, their manners, and their language; but differing essentially in each of these respects from every other portion of mankind; and neither desirous of communicating with, nor forming any designs against the rest of the world!' How strong an instance does China afford of the truth of the observation, that men are more easily governed by opinion than by power!"

It is not a little surprising, that none of the writers upon this singular and interesting subject, should have had recourse to the most judicious account of China which has yet appeared, that drawn up by Neuhoff, the secretary to a Dutch embassy in the seventeenth century. The passage is so striking that a literal translation may be acceptable.

" The number of inhabitants is vast, within and without the cities: the whole empire swarms with them like an ant hive. Besides the royal household, the magistrates, eunuchs, soldiers, priests, women, and children, the men arrived at the age of manhood, according to the books of taxation, are not less than fifty-eight millions nine hundred and fourteen thousand two hundred and eighty-four. Nor ought this to excite the astonishment of the reader, for if the great wall be defended by a million of soldiers, if there be three hundred thousand persons throughout China acknowledged to descend from Hunguvo, the founder of the Taminga dynasty, if five thousand soldiers perform, in their turns, the nightly watch of the palace, and as many eunuchs the daily watch, if there be numbered not less than ten thousand governors of provinces, cities, and other places of superior name, he would be easily credited who should assert, that this empire contains two hundred millions of souls: especially if you add the crowds of people who live upon the water, the number of vessels being so great, that when they drop anchor in the river at night, they often present a semblance of a great city. Beides, the number of inhabitants might be easily known, because each father of a family is obliged, under a severe fine, to affix to the principal door of his

his house, a list of the number and condition of the inhabitants. And lest any fraud should be committed, there is an inspector, called the Titang, over every ten houses, and if there be any error or fraud, he gives intelligence to the governor *."

The arguments here used by Neuhoff for his belief in the two hundred millions, are certainly not cogent. A modern reasoner on this topic would follow up the induction, to be derived from the number of those arrived at manhood, as evidenced by the books of taxation. As those persons could in no case exceed a fourth part of the population, that of the whole empire, in the time of Neuhoff, could not have fallen short of two hundred and thirty-five millions six hundred and fifty-seven thousand one hundred and thirty-six.

It must be remembered, that Neuhoff visited China when the new Mandshur emperor was not yet initiated into the profound jealousy of Chinese policy, and strangers had more free access to make inquiries of this nature: and our author displays such judgment on all occasions, that his accuracy deserves great confidence. The number of Chinese who perished by their resistance to the conqueror, was, in some instances, as at Canton, very great, and some large cities were even reduced to ashes; but supposing this loss to be even ten millions of lives, it can scarcely enter into the present calculation. Yet, the frequent famines in China, the exposition of infants, colonies, and perhaps other causes, must prevent our calculating upon the extent of the progressive population, and it may probably have little increased since the seventeenth century.

The table published by Sir George Staunton, is not only suspicious upon account of the round millions, as Mr. Barrow has observed, but also upon account of the sum total of three hundred and thirty-three millions, which seems rather adapted to a superstitious attachment to the number three, not unusual among the oriental nations. Supposing this objection unfounded, the round numbers will always lead us to infer with certainty, that the number of women, children, and perhaps of the untaxable poor, has been added at random, in order to make up complete millions for each province. In such cases it has been found among civilized nations, that a reduction of one-third part will come very near the truth. Thus, for example, the population of London has been vaguely estimated at twelve hundred thousand, but was found, upon enumeration, to be little more than eight hundred thousand; and many other similar examples might be given. In this way of reasoning, when the Chinese, a highly civilized people, speak of three hundred and thirty-three millions, they may be reduced to two hundred and twenty-two millions; which sufficiently corresponds with the statement by Neuhoff, to shew some approximation to the truth†.

Colonies, &c.] As the Chinese laws permit no native to leave his country, there can be no colonies properly so called ‡. The army has been computed at 1,000,000 of infantry, and 800,000 cavalry; and the revenues at about thirty-six millions and a half of tahels, or ounces of silver, or about nine millions sterling; but as rice, and other grain, are also paid in kind, it may be difficult to estimate the precise amount or relative value compared with European money §.

* P. 6. Amst. 1668, folio. The numerous views in this book are also very accurate, so far as Mr. Alexander, the draughtsman to the late English embassy, could judge.

† If Europe, computed at one hundred and fifty millions, and now desolated by petty conflicts, were one empire, it is probable that the population would soon equal that of China.

‡ Yet the number of Chinese at Batavia, and other situations in the Oriental Archipelago, many of whom pass as traders to and from their country, shews that these laws are little regarded.

§ Sir George Staunton, iii. 390, estimates the revenue at 200,000,000 of ounces of silver which he says equal 66,000,000l. sterling; but valuing the ounce of silver at five shillings, the amount is 50,000,000l.

Political Importance and Relations.] The political importance and relations of China may be said to be concentrated in itself, as no example is known of alliance with any other state. It has been supposed that one European ship would destroy the Chinese navy, and that 10,000 European troops might overrun the empire. Yet its very extent is an obstacle to foreign conquest, and perhaps not less than 100,000 soldiers would be necessary to maintain the quiet subjugation; so that any foreign yoke might prove of very short continuance. The recent conquest by the Mandshurs happened in consequence of the general detestation, excited against a sanguinary usurper; and the invaders were in the immediate proximity, while even a Russian army would find almost insurmountable difficulties on the route, and the conquest, like that by the descendants of Zingis, would infallibly prove of short duration. The English, in Hindostan, nearly approach to the Chinese territories; but there can hardly arise any rational ground of dissention in opposition to the interests of British commerce. Were the Chinese government persuaded of the utility of external relations, an alliance with the English might be adopted, as a protection against maritime outrage, while the Russian power might be divided by connections with the sovereigns of Persia.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs. — Language. — Literature. — Education. — Universities. — Cities and Towns. — Edifices. — Roads. — Inland Navigation. — Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE Chinese being a people in the highest state of civilization, their manners and customs might require a long description, especially as they are extremely different from those of other nations. The limits of this work will only admit a few hints. In visiting the sea-ports of China, foreigners have commonly been impressed with the idea of fraud and dishonesty; but it is to be supposed that these bad qualities are not so apparent where there are fewer temptations. The indolence of the upper classes, who are even fed by their servants, and the nastiness of the lower, who eat almost every kind of animal, in whatever way it may have died, are also striking defects, though the latter may be occasioned by dire necessity in so populous a country. To the same cause may be imputed the exposition of infants, a custom which long prevailed in Scandinavia, and was not unknown in ancient Greece and Rome, but which always yielded to the progress of civilization. On the other hand the character of the Chinese is mild and tranquil, and universal affability is very rarely interrupted by the slightest tincture of harshness or passion, These qualities may be partly imputed to the vigilant eye of the patriarchal government, and partly to strict abstinence from heating foods and intoxicating liquors. The general drink is tea, of which a larger vessel is prepared in the morning for the occasional use of the family during the day. Marriages are conducted solely by the will of the parents, and polygamy is allowed. The bride is purchased by a present to her parents, and is never seen by her husband till after the ceremony. Divorce is permitted in case of adultery, antipathy of temper, a claim urged by Milton; and even in case of just ground of jealousy, of gross indiscretion, and disobedience to the husband, of barrenness, and contagious diseases. Yet divorces are rare among the higher classes, whose plurality of wives enables them to punish by neglect. It is not permitted to bury in cities or towns, and the sepulchres are commonly on barren hills, and mountains, where there is no chance that agriculture will disturb the bones of the dead. The colour of mourning is white, that personal neglect or forgetfulness may appear in its squalor; and it ought on solemn occasions to continue for three years, but seldom exceeds twenty-seven months[1]. The walls of the houses are sometimes of brick, or of hardened clay, but more commonly of wood; and they generally consist only of a ground floor, though in those of merchants there be sometimes a second story which forms the warehouse. The houses are ornamented with columns, and open galleries, but the articles of furniture are few. The dress is long with large sleeves, and a flowing girdle of silk. The shirt and drawers vary accordingly to the seasons; and in winter the use of furs

[1] Du Halde, ii. 146.

is

is general, from the skin of the sheep to that of the ermine, The head is covered with a small hat, in the form of a funnel, but this varies among the superior classes, whose rank is distinguished by a large bead on the top, diversified in colour according to the quality. The dress is, in general, simple and uniform; and on the audience given to Lord Macartney that of the emperor was only distinguished by one large pearl in his bonnet. The chief amusements of the Chinese seem to be dramatic exhibitions, fire-works, in which they excel all other nations, and feats of deception and dexterity.

LANGUAGE.] The language is esteemed the most singular on the face of the globe. Almost every syllable constitutes a word, and there are scarcely 1500 distinct sounds; yet in the written language there are at least 80,000 characters, or different forms of letters, so that every sound may have about 50 senses. The leading characters are denominated keys, which are not of difficult acquisition. The language seems originally to have been hieroglyphical; but afterwards the sound alone was considered. Abstract terms are expressed, as usual, by relative ideas; thus *virtue*, which in Latin implies strength, among the Chinese signifies filial piety; the early prevalence of knowledge in China excluding mere strength from any meritorious claim.

EDUCATION.] The schools of education are numerous, but the children of the poor are chiefly taught to follow the business of their fathers. In a Chinese treatise of education published by Du Halde, the following are recommended as the chief topics. 1. The six virtues, namely, prudence, piety, wisdom, equity, fidelity, concord. 2. The six laudable actions, to wit, obedience to parents, love to brothers, harmony with relations, affection for neighbours, sincerity with friends, and mercy with regard to the poor and unhappy. 3. The six essential points of knowledge, that of religious rites, music, archery, horsemanship, writing and accompts. Such a plan is certainly more useful than the acquisition of dead languages.

CITIES AND TOWNS.] The chief cities of China are Pekin and Nankin, or the northern and southern courts, the former being the Cambalu, or city of the Chan, in writings of the middle ages, the capital of Cathay, as Nankin was of Mangi. Pekin occupies a large space of ground; but the streets are wide, and the houses seldom exceed one story. The length of what is called the Tatar city is about four miles, and the suburbs are considerable[2]. The principal part, or that called the Tatar city, is so denominated, because it was re-edified in the thirteenth century, under the dynasty of the Tatars, or rather the Monguls*. By the best information, which the recent embassy could procure, the population was computed at 3,000,000. The houses indeed are neither large nor numerous; but it is common to find three generations, with all their wives and children, under one roof, as they eat in common, and one room contains many beds. The neatness of the houses, and various repletion of the shops, delight the eye of the visitor. At Pekin the grand examinations take place, which confer the highest degree in literature, or in other words the chief offices in government. Excessive wealth, or poverty, seem equally unknown, as there is no right of primogeniture, and no hereditary dignity: and there are properly but three classes of men in China, men of letters, among whom the mandarins are selected; cultivators of the ground; and mechanics, including merchants.[4] The walls of this capital are of considerable strength and thickness; and the nine gates of no inelegant architecture. Strict police and vigilance are observed, and the streets are

[2] Staunton, iii. 418. [3] Id. ii. 297.

* So Staunton; but Du Halde, i. 135, says it is so called because the houses were allotted to the Mandshurs, in the beginning of the present dynasty.

[4] Staunton, ii. 329. But the military must be regarded as a fourth class.

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crowded with passengers and carriages. The grandest edifice is the imperial palace, which consists of many picturesque buildings, dispersed over a wide and greatly diversified space of ground, so as to present the appearance of enchantment.

POLICE.] "The police of the capital, is so well regulated, that the safety and tranquillity of the inhabitants are seldom disturbed. At the end of every cross street, and at certain distances in it, are a kind of cross bars, with centry boxes, at each of which is placed a soldier, and few of these streets are without a guard-house. Besides, the proprietor or inhabitant of every tenth house, like the ancient tythingmen of England, takes it in turn to keep the peace, and be responsible for the good conduct of his nine neighbours. If any riotous company should assemble, or any disturbances happen within his district, he is to give immediate information thereof to the nearest guard house. The soldiers also go their rounds, and instead of crying the hour like our watchmen, strike upon a short tube of bamboo, which gives a dull hollow sound, that for several nights prevented us from sleeping until we were accustomed to it*."

NANKIN.] Nankin, which was the residence of the court till the fifteenth century, is a yet more extensive city than Pekin, and is reputed the largest in the empire. The walls are said to be about 17 British miles in circumference. The chief edifices are the gates with a few temples; and a celebrated tower clothed with porcelain, about 200 feet in height. Such towers were styled pagodas by the Portuguese, who supposed them to be temples; but they seem to have been chiefly erected as memorials, or as ornaments, like the Grecian and Roman columns.

CANTON.] To the European reader one of the most interesting cities is Canton, which is said to contain a million and a half of inhabitants; numerous families residing in barks on the river. The European factories, with their national flags, are no small ornaments to this city. The chief export is that of tea, of which it is said that about 13,000,000 of pounds weight are consumed by Great Britain and her dependencies, and about 5,000,000 by the rest of Europe. The imports from England, chiefly woollens, with lead, tin, furs, and other articles, are supposed to exceed a million; and the exports a million and a half, besides the trade between China and our possessions in Hindostan. Other nations carry to Canton the value of about 200,000l. and return with articles to the value of about 600,000l. So that the balance in favour of China may be computed at a million sterling.

The other large cities of China are almost innumerable; and many of the villages are of a surprising size. Among the cities may be mentioned Singan, the capital of the province of Shensi, Kayfong, that of Honan, Tayyuen of Shansi, Tsinan of Shanton, Chingtu of Sechwun, Vuchang of Huquang, Nanchang of Kyangsi, Hangchew of Chekyang, Fuchew of Fokyen, Quegling of Quangsi, Queyyang of Queychew, and Yunnan of the western province so called, with Shinyan, the chief city of the northern province of Lyautong, and Kinkitao of Corea, a dependency of China. Of these cities Singan is by some esteemed equal to Pekin. In general the plan and fortifications are similar; and a Mandshur garrison is carefully maintained.

EDIFICES.] The most striking and peculiar edifices in China are the pagodas, or towers, already mentioned, which sometimes rise to the height of nine stories, of more than twenty feet each. The temples, on the contrary, are commonly low buildings, always open to the devotees of polytheism. The whole style of Chinese architecture is well known to be singular, and is displayed with the greatest splendour in the imperial palace at Pekin, which is described at great length by Du Halde, and Sir George Staunton. The late emperor chiefly resided in the summer at the palace

* Barrow's China, p. 100.

of

of Zheho, about 120 miles N. E. from Pekin, in the country of the Mandshurs, not far beyond the great wall, where the various edifices of the palace are, as usual, situated in a pleasure ground of wide extent. The architecture is elegant, and highly ornamented, but the paintings of mean execution, as the Chinese are strangers to perspective, and do not admit of shade, which they regard as a blemish.

Roads.] The roads are generally kept in excellent order, with convenient bridges. That near the capital is thus described by Sir George Staunton. "This road forms a magnificent avenue to Pekin, for persons and commodities bound to that capital, from the east and from the south. It is perfectly level; the centre, to the width of about twenty feet, is paved with flags of granite, brought from a considerable distance, and of a size from six to sixteen feet in length, and about four feet broad. On each side of this granite pavement is a road unpaved, wide enough for carriages to cross upon it. The road was bordered in many places with trees, particularly willows of a very uncommon girth. The travellers soon passed over a marble bridge, of which the construction appeared equal to the material. The perfection of such a fabric may be considered to consist in its being made as like as possible to that of which it supplies the want: and the present bridge seems to answer that description; for it is very wide, and substantially built, over a rivulet not subject to inundations, and is little elevated above the level of the roads which it connects together."

Inland Navigation.] The canals of China have long excited the envy and wonder of other nations. As the two grand rivers of Hoan ho and Kian ku bend their course from west to east, the chief object was to intersect the empire from north to south; which was in great measure accomplished by the imperial canal. This wonderful work, which in utility and labour exceeds the enormous wall, is said to have been begun in the tenth century of the Christian era, 30,000 men having been employed for 43 years in its completion.

"This great work differs much from the canals of Europe, which are generally protracted in straight lines, within narrow bounds, and without a current, whereas that of China is winding often in its course, of unequal and sometimes considerable width, and its waters are seldom stagnant.

"The ground which intervened between the bed of this artificial river, and that of the Eu-ho, was cut down to the depth of about 30 feet, in order to permit the waters of the former to flow with a gentle current into the latter. Their descent is afterwards checked occasionally, by flood gates thrown across the canal, whenever they were judged to be necessary, which was seldom the case, so near as within a mile of each other, the current of the water being slow in most places. This canal has no locks like those of Europe. The flood-gates are simple in their construction, easily managed, and kept in repair at a trifling expence. They consist merely of a few planks, let down separately one upon another, by grooves cut into the sides of the two solid abutments, or piers of stone, that project one from each bank, leaving a space in the middle just wide enough to admit a passage for the largest vessels employed upon the canal. As few parts of it are entirely level, the use of these flood-gates, assisted by others cut through its banks, is to regulate the quantity of water in the canal. Some skill is required to be exerted, in order to direct the barges through them without accident. For this purpose an immense oar projects from the bow of the vessel, by which one of the crew conducts her with the greatest nicety. Men are also stationed on each pier with fenders, made of skins stuffed with hair, to prevent the effect of the vessels striking immediately against the stone, in their quick passage through the gates.

"Light bridges of timber are thrown across those piers, which are easily withdrawn whenever vessels are about to pass underneath. The flood-gates are only opened

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ed at certain stated hours, when all the vessels collected near them in the interval pass through them, on paying a small toll, appropriated to the purpose of keeping in repair the flood-gates, and banks of the canal. The loss of water occasioned by the opening of the flood-gate is not very considerable, the fall at each seldom being many inches; and which is soon supplied by streams conducted into the canal from the adjacent country on both sides. The fall is however, sometimes above a foot or two, when the distace between the flood-gates is considerable or the current rapid. The canal was traced often in the beds of ancient rivers, which it resembled in the irregularity of its depth, the sinuosity of its course, and the breadth of its surface, where not narrowed by a flood-gate. Wherever the circumstances of the adjacent country admitted the water in the canal to be maintained in a proper quantity, without any material deficiency, or excess, by means of sluices managed in its sides, for the purpose of influx, or discharge, as was the case farther to the southward, few flood-gates were necessary to be constructed; nor were there any where met above half a dozen in a day[5]."

The same author describes this canal as begining at Lin-sin-choo, where it joins the river Eu-ho, and extending to Han-choo-foo, in an irregular line about 500 miles. Where it joins the Hoan-ho, or Yellow river, it is about three quarters of a mile in breadth. From the subsequent narrative it appears that Du Halde, Le Comte, and other French authors, have been misled when they supposed that the imperial canal extends from Canton to Pekin, while half of the course is supplied by river navigation, and smaller canals, and it is sometimes interrupted by mountainous districts *. In the south the river Kan Kian, which runs from S. W. to N. E., supplies a very considerable part of the Navigation.

To enumerate the other canals of China would be infinite, as there is a large canal in every province, with branches leading to most of the towns and villages.

MANUFACTURES AND COMMERCE.] The manufactures of China are so multifarious, as to embrace almost every article of industry. The most noted manufacture is that of porcelain; and is followed in trade by those of silk, cotton, paper, &c. The porcelain of China has been celebrated from remote ages, and is chiefly prepared from a pure white clay called kaolin: while the petunsi is understood to be a decayed felspar. Some writers add soap rock, and gypsum [6]. The excellent imitations which have appeared in various countries of Europe, more elegant in the form and painting, have considerably reduced the value of the Chinese manufactory.

The internal commerce of China is immense, but the external trade is unimportant, considering the vastness of the empire. A scanty intercourse exists with Russia, and Japan; but the chief export is that of tea, which is sent to England to the value of about one million yearly.

[5] Sir G. Staunton, iii. 204.

* Philips, p. 8. seq. gives a very erroneous idea of the length of this canal.

[6] Staunton, iii. 300

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

CLIMATE AND SEASONS.] THE European intercourse with China being chiefly confined to the southern part of the empire, the climate is generally considered as hot, whereas the northern part of this extensive country is liable to all the rigours of the European winter [1]. At Pekin such is the effect of the great range of Tatarian, or rather Manshurian, mountains covered with perpetual snow, that the average degree of the thermometer is under 20° in the night, during the winter months; and even in the day it is considerably below the freezing point. The inhabitants, unaccustomed to domestic fires, increase their cloathing; but in large buildings there are stoves provided with fossil coal, which is found in abundance in the vicinity. In an empire so wide, such a diversity of climate and seasons must occur that no general description can suffice. Perhaps every vegetable production, adapted to use or luxury, might be reared within the Chinese boundaries.

FACE OF THE COUNTRY.] The face of the country is infinitely diversified; and though in a general view it be flat and fertile, and intersected with numerous large rivers and canals, yet there are chains of granitic mountains, and other districts of a wild and savage nature. Cultivation has however considerably reduced the number and extent of such features, whence the natives seek to diversify the sameness of improvement, by introducing them in miniature into their gardens. In general the appearance of the country is rendered singularly picturesque by the peculiar style of the buildings, and uncommon form of the trees and plants.

SOIL AND AGRICULTURE.] The soil is infinitely various, and agriculture, by the account of all travellers, carried to the utmost degree of perfection. The extent of the internal commerce has had the same effect as if wealth had been procured from foreign climes; and the advantage has been laudably used in the improvement of the country. It is well known that the emperor himself sets an annual example of the veneration due to agriculture, the first and most important province of human industry. Sir George Staunton thus expresses his ideas of Chinese agriculture [2]:

"Where the face of the hill or mountain is not nearly perpendicular to the level surface of the earth, the slope is converted into a number of terraces, one above another, each of which is supported by mounds of stone. By this management it is not uncommon to see the whole face of a mountain completely cultivated to the summit. These stages are not confined to the culture of any particular vegetable. Pulse, grain, yams, sweet potatoes, onions, carrots, turnips, and a variety of other culinary plants, are produced upon them. A reservoir is sunk in the top of the mountain. The rain water collected in it is conveyed, by channels, successively to the different terraces, placed

[1] Staunton, iii. 157. [2] Ibid, iii. 306.

upon

upon the mountain's sides. In spots too rugged, barren, steep, or high for raising other plants, the camellia sesanqua, and divers firs, particularly the larch, are cultivated with success.

" The collection of manure is an object of so much attention with the Chinese, that a prodigious number of old men and women, as well as of children, incapable of much other labour, are constantly employed about the streets, public roads, banks of canals, and rivers, with baskets tied before them, and holding in their hands small wooden rakes, to pick up the dung of animals, and offals of any kind, that may answer the purpose of manure; but above all others, except the dung of fowls, the Chinese farmers, like the Romans, according to the testimony of Columella, prefer soil or the matter collected by nightmen in London, in the vicinity of which it is in fact applied to the same uses; as has already been alluded to in describing a visit to the Lowang peasant in a former part of this work. This manure is mixed sparingly with a portion of stiff loamy earth, and formed into cakes, dried afterwards in the sun. In this state it sometimes becomes an object of commerce, and is sold to farmers, who never employ it in a compact state. Their first care is to construct large cisterns for containing, besides those cakes and dung of every kind, all sorts of vegetable matter, as leaves or roots or stems of plants, mud from the canals, and offals of animals, even to the shavings collected by the barbers. With all these they mix as much animal water as can be collected, or of common water as will dilute the whole; and in this state, generally in the act of putrid fermentation, they apply it to ploughed or broken earth. In various parts of a farm, and near paths and roads, large earthen vessels are buried to the edge in the ground, for the accommodation of the labourer or passenger, who may have occasion to use them. In small retiring houses, built also upon the brink of roads, and in the neighbourhood of villages, reservoirs are constructed of compact materials to prevent the absorption of whatever they receive, and straw is carefully thrown over the surface from time to time, to stop the evaporation. And such a value is set upon the principal ingredient for manure, that the oldest and most helpless persons are not deemed wholly useless to the family by which they are supported.

" The quantity of manure collected by all these means must however be still inadequate to that of the cultured ground, which bears so vast a proportion to the whole surface of the country. It is reserved therefore, in the first instance, for the purpose of procuring a quick succession of culinary vegetables, and for forcing the production of flowers and fruit. Among the vegetables raised most generally, and in the greatest quantities, is a species or variety of brassica, called by the Chinese pe-tsai, or white herb, which is of a delicate taste, somewhat resembling what is called coss-lettuce, and is much relished in China by foreigners as well as natives. Whole acres of it are planted every where in the vicinity of populous cities; and it was sometimes difficult to pass on a morning through the crowds of wheel-barrows, and hand-carts, loaded with this plant, going into the gates of Pekin and Han-choo-foo. It seems to thrive best in the northern provinces, where it is salted for winter consumption, and in that state is often carried to the southward and exchanged for rice. That grain, and that herb, together with a relish of garlick or of onions, in room of animal food, and followed by a little infusion of coarse tea, serve often as a meal for a Chinese peasant or mechanic. The Chinese husbandman always steeps the seeds he intends to sow in liquid manure, until they swell, and germination begins to appear; which experience, he says, has taught him to have the effect of hastening the growth of plants, as well as of defending them against the insects hidden in the ground in which the seeds were sown. Perhaps this method has preserved the Chinese turnips from the fly, that is often fatal to their growth elsewhere. To the roots of plants and fruit trees the Chinese farmer applies liquid manure likewise, as contributing much towards forwarding their growth and vigour. The Roman

author, already quoted in this chapter, relates that a similar practice had much improved the apples and vines of Italy.

" The great object of Chinese agriculture, the production of grain, is generally obtained with little manure, and without letting the land lie fallow. It is true that there are plants, such as a species of the epidendron, that is capable of vegetating in air alone. Others, as bulbous roots and succulent plants, which thrive best in sand, and a great variety in water; but, with those exceptions, virgin or vegetable earth is the proper bed of vegetation: and whatever may be the theory of the agricultural art, its practice certainly requires that there should be given to the soil such a texture and consistency as may be found most suitable to the plants intended to be raised. Such a texture may in most cases be obtained by the application of manures, being generally a mixture of animal and vegetable substances, that have undergone the putrefactive fermentation. A mucilage is thus formed, which, besides any other changes it may produce, is found to give a new consistence to the soil with which it comes in contact, to render clay more friable, and to give tenacity to light and sandy soils; as well as to maintain in both a proper degree of temperature and humidity."

This ingenious and well informed author proceeds to applaud the industry of the Chinese, in mingling their soil, and in the irrigation of land, which last they consider as a leading principle of agricultural skill. The plough is simple, and managed by one person, having but one handle, and no coulter, which is deemed unnecessary, as there is no uncultivated ground, and consequently no turf to cut through, in China. The husbandry is singularly neat, and not a weed is to be seen.

In describing the rivers of this great empire two are well known to deserve particular attention, namely the Hoan-ho, and the Kian-ku. The sources of the first, also called the Yellow river, from the quantity of mud which it devolves, are two lakes, situated amongst the mountains of that part of Tatary known by the name of Kokonor*. They lie about the 35° of north latitude, and 19° of longitude, to the westward of Pekin, being, according to Arrowsmith's map of Asia, about 97° east from Greenwich[3]. This prodigious river is extremely winding and devious in its course, pursuing a N. E. direction to about the 42° of north latitude, and after running due east it suddenly bends south to a latitude nearly parallel to its source, and pursues an easterly direction till it be lost in the Yellow sea. Its comparative course may be estimated at about 1800 British miles; or according to the late embassy, 2150. At about 70 miles from the sea, where it is crossed by the imperial canal, the breadth is little more than a mile, and the depth only about nine or ten feet; but the velocity equals about seven or eight miles in the hour[4].

The Kian-ku rises in the vicinity of the sources of the Hoan-ho; but according to the received accounts and maps about 200 miles further to the west, and winds nearly as far to the south as the Hoan-ho does to the north. After washing the walls of Nankin it enters the sea about 100 miles to the south of the Hoan-ho. The Kian-ku is known by various names through its long progress; and near its source is called by the Eluts Porticho or Petchou; the course is about equal to that of the former, these two rivers being considered as the longest on the face of the globe; they certainly equal, if they do not exceed, the famous river of the Amazons in South America, and

* In the Chinese language *Hoang* implies yellow; it rises in the mountains called Quenlun by the Chinese; Otunlao by the Tibetans. Some say that *Ho* implies a large river, *Kiang* one of middle size, Yang-sou son of the sea. De Guignes always uses simply *Hoam* and *Kiam*, as the names of the two great Chinese rivers. Kiang or Yang-sou Kiang rises in the mountains of Min, whence it is also styled Min-kiang.

[3] Staunton, iii. 232; but the *starry fountains* are more to the west. See the Atlas and description by Du Halde.

[4] Ib. iii. 234.

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the majestic course of the Ganges does not extend half the length. In the late embassy the length of the Kianku is estimated at about 2200 miles; and it is observed that these two great Chinese rivers, taking their source from the same mountains, and passing almost close to each other, in a particular spot, afterwards separate from each other to the distance of 15° of latitude, or about 1050 British miles; and finally discharge themselves into the same sea, comprehending a track of land of about 1000 miles in length, which they greatly contribute to fertilize.

To these grand rivers many important streams are tributary; but it would be infinite to enumerate the various waters which enrich and adorn this wide empire. The Eu-ho in the north; the Hoan-ho, the Lo-kiang, the Kan kiang, the Ou-kiang, and others in the centre; and the Hon-kian, Pe-kiang, and others in the south, are chiefly noted by geographers, who are more inclined to fill their maps with names of towns and villages, than to discriminate the lasting features of nature.

Lakes.] Nor is China destitute of noble and extensive lakes. Du Halde informs us that the lake of Tong-tint-hou, in the province of Hou-quang, is more than 80 leagues in circumference. That of Hong-si-hou is partly in the province of Kiang-nan, and partly in an adjoining division of the empire. That of Poyang-hou, in the province of Kiangsi, is about thirty leagues in circumference, and is formed by the confluence of four rivers as large as the Loire; this last is of dangerous navigation. There is also a considerable lake, not far to the south of Nankin, called Tai-hou; and the map of D'Anville indicates a number of smaller lakes, chiefly in the eastern and central parts of China. Some of these lakes are described in the late embassy, as those of Paoyng, Tai-hou, and Sec-hoo. Upon a lake near the Imperial canal were observed thousands of small boats and rafts, constructed for a singular species of fishery. "On each boat, or raft, are ten or a dozen birds, which, at a signal from the owner, plunge into the water; and it is astonishing to see the enormous size of fish with which they return, grasped within their bills. They appeared to be so well trained that it did not require either ring or cord about their throats, to prevent them from swallowing any portion of their prey, except what the master was pleased to return to them, for encouragement and food. The boat used by these fishermen is of a remarkable light make, and is often carried to the lake, together with the fishing birds, by the men who are there to be supported by it."

The large lake of Wee-chaung-hoo is also described in the embassy as a singular scene of nature, and of industry; this lake, with several others, appear to be omitted in the maps. That of Tai-hoo is surrounded by a chain of picturesque hills, and was full of pleasure boats, many of them rowed by a single female[5].

Mountains.] Concerning the extensive ranges of Chinese mountains, no general and accurate information has yet been given. Du Halde's ample description of the Chinese empire only informs us that some abound with mines of silver, others produce marble and crystal, while some supply medicinal herbs. But the ancients give ideas at once general and precise, while modern information is often confused from its minuteness, and the consideration of the grand features of nature is sacrificed to that of the petty exertions of man. From the same author we learn that the provinces of Yunnan, Koeitcheou, Setchuen, and Fokien, are so mountainous as greatly to impede their cultivation; and that of Tchekiang has dreadful mountains on the west. In the province of Kiangnan there is a district full of high mountains, which also abound in the provinces of Chensi and of Shansi. This imperfect information is little enlarged by the account published of the late embassy*; and perhaps Mr. Arrowsmith's recent map

[5] Staunton, iii. 220.

* The Abbe Grosier's account is equally imperfect, and only filled with idle tales.

of

of Asia contains as authentic information as can be procured concerning the course and extent of the Chinese mountains. It hence appears that a considerable branch extends from those in central Asia, running south to the river Hoan-ho. Two grand ranges, running E. and W., intersect the centre of the empire, seemingly continuations of the enormous chains of Tibet. In the southern part of China the principal ridges appear to run from N. to S.

The Chinese chains of mountains, some of which are supposed to rival the Apennines and Pyrennees, may be seven or eight in number; but so imperfect is still our knowledge of this empire, that no general appellations have been conferred, and scarcely is the name of one Chinese mountain known to geography. D'Anville, amidst all his care and exuberance of information from French Jesuits who had long resided in China, lays down the mountains on his usual plan in all his maps, as confused spots scattered over the whole country, so that in this grand department he may be said to yield even to the meanest of his predecessors.

Forests.] Such is the cultivation diffused throughout China, that few forests remain except in the mountainous districts. Near the royal palaces there are indeed forests of great extent, but they rather bear the appearance of art than of nature.

Botany.] The number of Europeans who have been allowed to visit the interior of China is so small, and those to whom this privilege has been granted having objects of more urgency to attend to than the indigenous plants of this vast empire, we are as yet only in possession of some scattered fragments of the Chinese flora. The neighbourhood of Canton has been surveyed by Osbeck, and a meagre list of plants is to be found in Staunton's account of the English embassy there. These are almost the only authentic sources that have been hitherto opened, and are calculated rather to excite than to satisfy the botanical inquirer *.

Among the trees and larger shrubs we find particularized the thuya orientalis, an elegant evergreen; the *camphor* laurel, whose wood makes an excellent and durable timber, and from the roots of which that fragrant substance camphor is procured by distillation; *oleander-leaved spurge*, a large shrub used as a material for hedges; hibiscus ficulneus and mutabilis, the latter of which is a tree of considerable size, and eminently conspicuous for its splendid blossoms; croton sebiferum, *tallow tree*, from the fruit of which a green wax is procured that is manufactured into candles; the spreading *banyan tree* growing among loose rocks; *weeping willow; Spanish chestnut;* and the *larch*. Of the fruit trees the following are the principal: *China orange; plantain tree; tamarind;* the *white* and *paper mulberry* tree; the former of these is principally cultivated for the use of its leaves, on which the silkworms are fed; and of the bark of the latter, paper, and a kind of cloth, are made. Nor must the two species of the *tea tree*, thea viridis and bohea, be left unnoticed, whose leaves constitute so large a proportion of the European trade with China.

Several beautiful plants grow wild in the hedges, such as *globe amaranth; balsam;* and that elegant climber ipomea quamoclit.

Of those plants that grow in China by the river sides, or in marshy places, the most worthy of notice are the smilax China, and sarsaparilla; maranta galanga, *galangale*, used in medicine; nymphæa nelumbo, a species of *water lily*, the roots of which are esculent; arundo bambos, *bamboo*, the largest plant of the grass kind, the stems of which, from their lightness and strength, are applied to a multitude of useful purposes; and after indicus, *China-aster*, a common ornament of our gardens; the splendid and

* Osbeck's voyage to China, Staunton's account of the embassy to China.

capricious

capricious ixia, and the elegant azalea-indica. Among ruins and in shady places are urtica nivea, *snowy nettle;* canna indica, *Indian reed;* cassica sophora, convallaria sinensis, and hedysarum gangeticum.

Besides the multitude of vegetables that are cultivated as articles of human food, and which are probably natives of India, Japan, and the neighbouring islands, the following are found in a truly wild state in China, viz. three species of dolichos, *kidney bean;* d. sinensis, *calvanses;* d. soya, from the beans of which the true Indian soy is made; and d. cultratus: dioscorea alata, *yam*; cucurbita sinensis, *China gourd;* nicotiana tabacum, *tobacco;* and convolvulus battatas, *sweet potatoe.*

The rocks and mountainous parts, as far as they have been examined, abound with beautiful plants, among which may be particularized ixora coccinea, a most elegant shrub, with large scarlet blossoms; nauclea orientalis; convolvulus hirtus; *hairy bindweed,* with yellow flowers; monarda sinensis; daphne indica; and lobelia zeylanica.

A few others which have been introduced into our gardens remain to be mentioned: mirabilis odorata; crotalaria juncea; rosa indica, *China rose*; dianthus sinensis, *China pink;* and barleria cristata.

Zoology.] The zoology of China may be conceived to be extremely various and interesting, as many even of the common animals differ so much in their appearance from those found in other countries. Such is the opulence of materials in every department of zoology, that the reader must be referred to Osbeck, and other sedulous inquirers into natural history, for satisfaction on a subject which might extend to several volumes.

There are few animals which are not known in the other regions of the east, but an attempt to point out the diversities in the species would exceed the limits of the present design. Du Halde asserts that the lion is not found among the Chinese animals; but there are tigers, buffaloes, wild boars, bears, rhinoceroses, camels, deer, &c.[6] Some of the camels are not higher than horses, with two hunches, while that kind called the dromedary, with one hunch, is found in the northern parts of Africa, and other comparatively temperate regions, being more numerous than the camel. The musk deer is another singular animal of China as well as Tibet: and Du Halde has enumerated several fabulous animals, like the griffins and dragons of classical fable, among which is a large ape, which is said to imitate all the actions of man, and a kind of tiger resembling a horse covered with scales. Among the birds many are remarkable for their beautiful forms and colours, in which they are rivalled by a variety of moths and butterflies.

Mineralogy.] Among the metals lead and tin seem to be the rarest. China produces mines of gold, silver, iron, white copper, common copper, mercury, lazulite or lapis lazuli, jasper, rock crystal, loadstone, granite, porphyry, and various marbles. According to some, rubies are found in China; but others assert that they come from Ava.

In many of the northern provinces fossil coal is found in abundance. According to Du Halde it forms veins in the rocks, which would constitute an uncommon circumstance in the history of that mineral. The common people generally use it, pounded with water, and dried in the form of cakes. Du Halde says that the use of it was dangerous from its suffocating smell, except a vessel of water were placed near the stove. Pekin is supplied from high mountains in the vicinity, and the mines seem inexhaustible, though the coal is in general use.

Mines of silver are abundant, but little worked, from an apprehension of impeding the progress of agriculture; an idle fear, for silver might as well be exported as tea.

[6] Du Halde, i. 32. ii. 184.

The gold is chiefly derived from the sands of certain mountains, situated in the western part of the provinces of Sechuen and Yunnan, towards the frontiers of Tibet. That precious metal is seldom used, except by the gilders; the emperor alone having solid vessels of gold.

Tutenag, which is a native mixture of zinc and iron, seems to be a peculiar product of China; and in the province of Houquang there was a mine which yielded many hundred weight in the course of a few days.

The copper of Yunnan, and other provinces, supplies the small coin current through the empire: but there is a singular copper of a white colour, called by the Chinese *petong*, which deserves particular notice. This metal must not be confounded with the tutenag, an error not unfrequent. It is indeed sometimes mingled with tutenag to render it softer, according to Du Halde; but there is a better method in mingling it with one-fifth part of silver.

The Chinese musical stone is a kind of sonorous black marble. Lazulite is found in Yunnan, Sechuen, and Shansi. Several of the Chinese idols and small vessels are formed of smectite, or indurated steatites, of a delicate white or yellow, with a greasy appearance *. The mountains in the north and west of China no doubt furnish a number of other mineral objects, which may have escaped notice, amidst the imperfect knowledge which Europeans have yet attained of this extensive empire.

Mineral Waters, &c.] Mineral waters must be numerous in so wide a country, and the Chinese rarely neglect any natural advantage; but travellers do not seem to have recorded any springs especially mineral. The natural curiosities of China are in the like predicament †.

CHINESE ISLANDS.

Numerous isles are scattered along the southern and eastern coast of China, the largest being those of Taiwan, also called Formosa, and that of Hainan. Formosa is a recent acquisition of the Chinese in the latter end of the seventeenth century, the natives being by the Chinese accounts little better than savages. It is divided from north to south by mountains, and the chief Chinese possessions are in the western part. Du Halde has given a short history of Formosa, which may be consulted by the curious reader, who on this occasion may perhaps recollect the singular forgeries of the pretended Psalmanazar. In 1782 Formosa was visited by a terrible hurricane, and the sea rose to such a height as to pass over a great part of the island; but the Chinese emperor caused the damages to be repaired with paternal care [7].

The southern part of Hainan is mountainous, but the northern more level and productive of rice. In the centre there are mines of gold; and on the shores are found small blue fishes, which the Chinese esteem more than those which we call gold and silver fish; but they only survive a few days when confined to a small quantity of water.

The isles of Leoo-keoo, between Formosa and Japan, constitute a little civilized kingdom tributary to China. These isles are said to be thirty-six in number, but very inconsiderable, except the chief, which is properly and peculiarly called Leoo-keoo,

* Absurdly supposed to be *baked rice*.

† Neuhoff, p. 72 — 76, enumerates the cataracts, medical springs, and mountains of China. There is a great cataract at Pinjao in Shansi: and in Honan the river Ki runs a space under ground. Highest mountains, Pie near Sintien, Kiming near Kinkoam, which requires nine days to ascend, and others in the province of Suchuen. Near Paning mount Io produces gems.

[7] Grosier's General Description of China. Eng. Tr. i. 225.

and

and by the Chinese accounts is 440 *lys* in length, probably that *ly* or Chinese stadium of which 250 constitute a degree, so that the length will be about 125 British miles, nearly twice the extent which is assigned in recent maps. The capital called Kintching, is said by Grosier to be on the S. E. side of the isle, while D'Anville and others place it on the S. W.* When our author affirms that these isles constitute a powerful and extensive empire, a smile must be excited by the exaggeration; but the natives seem to rival the Hindoos in Chronology, as their royal dynasties are said to have continued for eighteen thousand years. These isles were *discovered* by the Chinese in the seventh century, while the Phenicians had discovered Britain at least four centuries before Christ; but it was not till the fourteenth century that they became tributary to China. The emperor Kang-hi, about A. D. 1720, ordered a temple to be erected to Confucius in the chief island, with a literary college. The language is said to differ from that of China or Japan; but the civilization seems to have proceeded from the latter country, as the Japanese characters are commonly used. The people are mild, affable, gay, and temperate; and the chief products are sulphur, copper, tin, with shells and mother of pearl.

* This may be a mistake of Grosier, or his English translator, for the work is far from being infallible. Yet upon the whole it is the best description of China which has appeared, and it is only to be wished that the compiler had quoted his authorities.

PART II.

CHINESE TATARY.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

NAMES.] THE vulgar name of Tartary, or more properly, and in the universal enunciation of the east, Tatary, was originally extended over the vast regions lying between Tibet, China, and the Arctic ocean; and from the Black Sea in the west, to the utmost bounds of north eastern discovery in Asia. As more precise knowledge has arisen the northern part has acquired the name of Siberia, while the southern, in some maps of recent date, is known by the appellations of western and eastern Tartary. Yet even in this part, which might more properly be styled Central Asia, the Tatars properly so denominated are few; the most numerous tribes being Monguls in the west, and Mandshurs in the east. But the various nations subject to the Chinese have not been discriminated with the accuracy which Pallas and other travellers have employed in illustrating the origin of those subject to Russia.

It is however sufficiently clear, from the accounts of Du Halde and Pallas, that he Oelets, or Eluts, are the same people with the Kalmucs, who possess the regions of Gete and little Bucharia, with the parts on the N. and E. of Turfan formerly held by the Ugurs or Eygurs, a Finish nation who had wandered from the north. The Kalkas are also Monguls, as are the Ortoos between the Chinese wall and great river Hoan Ho. It is equally ascertained that the inhabitants of the province of Nertchinsk, or Russian Daouria, are Tunguses, who are a chief branch of the Mandshurs [9]. And the Tagours, or Dourians, subject to China on the eastern side of the great range called Siolki, are also Mandshurs, who extend to the eastern ocean, while in Siberia the Tunguses spread as far west as the river Yenisei.

Upon the whole this extensive region might more properly be called Mongolia, as the greater number of tribes are Monguls; or the western part might be styled Tatary, the middle Mongolia, and the eastern Mandshuria. The two latter are the objects of the present description; as that of Independent Tatary will be found after the account of Persia, with which it has (as now limited) in all ages been connected.

[9] Dec. Russ. tome vi. 253, &c.

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EXTENT.] This wide and interesting portion of Asia, which has repeatedly sent forth its swarms to deluge the arts and civilization of Europe, extends from the 72d° of longitude east from Greenwich to the 145th°, a space of not less than 73° of longitude, which at the medial latitude of 45° will yield about 3100 geographical miles. The breadth from the northern frontier of Tibet to the Russian confines is about 18 degrees, or 1080 geographical miles. The boundary towards Russia has been already described. From the treaty published by Du Halde [2] it appears that the river Kerbetchi, being the nearest to the river Chorna (called by the natives Ourouon), and which discharges itself into the great river Sagalien Oula, was the Chinese definition of the boundary between the empires; to which were added the long chain of mountains above the source of the river Kerbetchi, and the river Ergone or Argoon. The eastern boundary is the sea, while the southern extends along the great Chinese wall, and the northern limits of Tibet. The western boundary is supplied by the celebrated mountains of Belur Tag or the Crystal Mountains *, which divide the Chinese empire from Balk, and the Greater Bucharia; while the range on the west of the lake Palkati separates the Kalmucs, subject to China, from the Kirguses of Independent Tatary.

ORIGINAL POPULATION.] The early population of central Asia appears to have been indigenal, so far as the most ancient records extend. Part of the west was held by the Scythæ of antiquity, seemingly a Gothic race, who were subdued or expelled by the Tatars or Huns from the east, pressed on the other side by the Monguls †. Beyond the latter were the Mandshurs, who though inferior to the Monguls in power, yet retained their ancient possessions, and in the seventeenth century conquered China. At present the chief inhabitants are the Mandshurs of the eastern provinces; with the tribes denominated Kalkas, Eluts, and Kalmucs, who are Monguls as already mentioned. The information concerning central Asia is indeed very lame and defective; and though the late Russian travellers afford a few hints, yet the jealousy of the Chinese, and other causes, have contributed to prolong our ignorance concerning this interesting region.

PROGRESSIVE GEOGRAPHY.] Though Ptolemy has laid down with some degree of accuracy the country of the Seres or Little Bucharia, the progressive geography of central Asia may be said to commence with the travels of Marco Polo, in the end of the thirteenth century. Yet prior to this epoch the victories of Zingis and his immediate successors, having excited the attention of Europe, the friar Plano Carpini travelled a considerable way into Tatary, and found the emperor not far from the frontiers of China. This envoy was followed by Rubruquis, whose real name seems to have been Ruysbroeck, and who appears to have visited the countries on the banks of the Onon. But the travels of Polo being more extensive, and more minutely described, he is justly regarded as the father of Tataric geography, and his description of the countries to the north of Tibet, including Tangut ‡, and other names which have vanished from modern geography, is not a little interesting. Yet a dissertation, aided by the most recent researches, would be required to reduce his geography to any precision.

[2] iv. 242.

* An eminent oriental scholar informs me that *Tag* or *Dag* is a mountain. Belûr is *crystal*, Bolût is a cloud.

† De Guignes in his elaborate history of the Huns has sometimes confounded the Tatars with the Monguls, but in vol. i. part i. p. 213, he says expressly, that the Huns are the western Tatars. The Monguls afterwards seizing a part of their country, he has often confounded the two nations, not being aware of the radical difference in their language.

‡ This appears to have been the country immediately to the N. W. of the Chinese province of Shensi. See Forster's Hist. Voy. and Disc. in the North, p. 107.

The more recent accounts, among which may be mentioned the travels of Gerbillon, published by Du Halde, and those of Bell, with some hints of Pallas, may be said to embrace but small portions of this vast territory *. The imperfect state of knowledge concerning this country may be imagined, when even D'Anville has been obliged to have recourse to Marco Polo!

HISTORICAL EPOCHS.] The chief historical epochs of this part of Asia may perhaps be more certainly traced in the Chinese annals, than in any other documents. The first appearance of the Huns or Tatars may be observed in the pages of Roman history. The annals of the Monguls, the most important nation, faintly illuminate the pages of Abulgasi, whence it would appear that prior to Zingis there was only one celebrated chan named Oguz, who seems to have flourished about the 130th year of the Christian era. The reigns of Zingis and Timur are sufficiently known in general history; but the divisions of their conquests, and the dissentions of their successors, have now almost annihilated the power of the Monguls, who being partly subject to China, and partly to Russia, it is scarcely conceivable that they can again disturb the peace of their neighbours.

ANTIQUITIES.] Few antiquities remain to illustrate the power of the Monguls. Karacum, or Caracorum, also called Holin by the Chinese, the capital city of the Mongolian power, is now so far obliterated that geographers dispute concerning its situation, D'Anville placing it, with a confession of uncertainty, on the river Onghin, while others assign the banks of the river Orchon, about 150 British miles to the N.W. It is probable that when this region shall be more fully explored by travellers, several tombs, temples, and other remains of antiquity, may be discovered.

* The notes to the *Histoire Genéalogique des Tatars*, Leyde, 1726, 8vo. must not be forgotten amidst the few materials.

Vol. II. page 15.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Government. — Laws. — Population. — Army. — Political Importance and Relations.

RELIGION.] THE religion most universally diffused in this part of Asia is what has been called Shamanism, or the belief in a supreme author of nature, who governs the universe by the agency of numerous inferior spirits of great power. The Kalkas were accustomed to acknowledge a living Lama, or great spirit embodied; a form of superstition which will be better illustrated in the account of Tibet[1].

GOVERNMENT.] The government was formerly monarchical, with a strong mixture of aristocracy, and even of democracy. At present it is conducted by princes who pay homage to the Chinese empire, and receive Chinese titles of honour; but many of the ancient forms are retained. Though writing be not unknown among the Monguls, yet the laws appear to be chiefly traditional.

POPULATION.] Of the population of these regions it is difficult to form any precise ideas. As the numerous tribes subject to Russia are found, under splendid appellations, to present but a slender number of individuals, not exceeding two or three millions, it may perhaps be reasonable to infer that amidst the wide deserts and barren mountains of central Asia, there do not inhabit above six millions.

A proper enumeration would indeed depend upon authentic enquiries into the state of the various tribes. The country of the Mandshurs is by the Chinese divided into three great governments. 1. That of Chinyang comprizing Leaodong, surrounded in part by a strong barrier of wood. The chief town is Chinyang, also called Mugden by the Mandshurs, still a considerable place, with a mausoleum of Kunchi, regarded as the conqueror of China, and the founder of the reigning family[2]. 2. The government of Kiren-Oula, which extends far to the N.E., where there are many forests and deserts on both sides of the great river Sagalien. Kirem the capital stands on the river Songari, which falls into the Sagalien or Amur, and was the residence of the Mandshur general, who acted as viceroy[3]. 3. The government of Tsitchicar, so called from a town recently founded on the Nonni Oula, where a Chinese garrison is stationed. The Russians call this province Daouria, from the tribe Tagouri, who possess a great part of this territory. The western boundary is the river Argoon, the frontier between Russia and China, also marked in the treaty by another river, the Kerbetchi, which seems to have vanished from recent maps. These provinces having been the seat of the Mandshur monarchy before the conquest of China, have since that event remained subject to their ancient sovereigns.

In this division may also be mentioned Corea, which has for many centuries acknow-

[1] A curious account of the religion of the Monguls may be found in the sixth volume of the *Decouvertes Russes*. The *gellungs* or priests are the *gylongs* of Tibet, and the other features seem to correspond.

[2] La Croix, ii. 221. [3] Du Halde, iv. 7.

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ledge the authority of China, and which boasts a considerable population. The language, according to Du Halde, differs from the Chinese, and from what he calls the Tataric, probably the Mandshur. That writer may be consulted for a more particular account of this extensive province; the geography of which still remains rather doubtful.

To the west are various tribes of Monguls; as the Kalkas; those around Koko Nor, or the Blue Lake, who are also called Œlets, Eluts, or Kalmucs, the terms only implying particular Mongul branches. The Eluts have been greatly reduced by two destructive wars against the Chinese in 1720 and 1757; and their contaisch, or great chain, has disappeared. Their country may be considered under three divisions. 1. That part called Gete even to the time of Timur, which some regard as the country of the ancient Massagetæ, towards the lakes of Palkati, Balkash or Tengis, and Zaizan. The contaisch used chiefly to reside at Harcas or Erga on the river Ili, which flows from the S. E. into the lake of Balkash. 2. Little Bucharia, so called to distinguish it from the Greater Bucharia, which is subject to the Usbeks, a Tataric nation: but the people of Little Bucharia are an industrious race of a distinct origin, who are little mingled with their Kalmuc or Mongul lords. 3. The countries of Turfan to the north of the lake called Lok Nor, and that of Chamil or Hami to the east, regions little known, and surrounded with wide desarts *. Upon the whole it may perhaps be found that the Mandshurs are the most populous race; and that the Monguls, though diffused through a vast territory, can hardly boast the name of a nation. The Kirguses, or Tatars proper of the west, are confined to a small and unfertile district; and may more properly be considered as belonging to Independent Tatary.

Army.] It is probable that this part of the Chinese empire might muster a large but ineffectual army; and amidst modern tactics and weapons little needs be apprehended from a new deluge of Mongul barbarians. If the various tribes of Mandshurs, Monguls, and Tatars were to coalesce under some chief of great abilities, the political importance and relations of central Asia might resume their former fame: but their interests are now so various and discordant, that while the empires of Russia and China exist, they can only be regarded as connected with the policy of these powerful states.

* See remarks on the geography of these countries in the account of Great Bucharia. Turfan is commonly included in Little Bucharia; and Gete is the Soongaria of the Russians. *Soongaria* means the left hand, as those tribes adoring towards the east call Tibet *Barontala*, or the region on the right.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs. — Language. — Literature. — Cities and Towns. — Manufactures and Commerce.

MANNERS AND CUSTOMS.] THE manners and customs of the Monguls have been already briefly described in the account of Asiatic Russia. Du Halde observes that these wandering nations "appear always contented, and free from care; of a happy temper, and a gay humour, always disposed to laughter, never thoughtful, never melancholy." And he adds, "what reason can they have to be so? they have neither neighbours to please, nor enemies to fear, nor great people to court; and are free from difficult business, or constrained occupation, delighting themselves only in the chace, in fishing, and various exercises, in which they are very skilful [1]."

The Mandshurs, who here deserve particular notice, are little distinguishable in their manners from the Monguls. By the account of the Jesuits they have no temples, nor idols, but worship a supreme being, whom they style emperor of heaven. But probably their real creed is Shamanism, or a kind of rational polytheism, not unknown to the Jews, who admitted, as appears from Daniel, great angels or spirits, as protectors of empires. Of the three grand nations perhaps the Mandshurs may be regarded as approaching the nearest to civilization, especially since their conquest of China: and their advancement must have been greater, since the late emperor ordered the best Chinese books to be translated into the Mandshur language. Yet the Chinese retain great antipathy against their conquerors, whom they despise as a filthy race of savages. The Mandshurs are of a more robust form, with countenances less expressive: and the feet of their women are not disfigured like those of the Chinese. The head dress of this sex consists of natural and artificial flowers. The general raiment is the same as the Chinese [2].

LANGUAGE.] The three languages of the Mandshurs, Monguls, and Tatars, radically differ from each other. M. Langles published at Paris, about ten years ago, a prospectus of an intended dictionary of the Mandshur language, in which he pronounces it the most learned and perfect of the Tataric idioms, not excepting that of Tibet, though not written till the beginning of the seventeenth century, when the monarch charged some literati to design letters after those of the Monguls, nearly resembling those of the Ugurs, which to the eye of M. Langles seemed to spring from the Strang-helo, or ancient Syriac. Yet from the account of this author it appears that the Mandshur grammar presents 1500 groupes of syllables, which he has analysed into 29 letters; of which the greater part have three forms, as they happen to appear in the beginning, middle, or end of a word.

[1] iv. 32. [2] Staunton, ii. 358.

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LITERATURE.] Of the native literature of the Mandshurs little is known, except that a code of laws was drawn up by the order of one of the monarchs, prior, it is believed, to the conquest of China. The imported literature by the translation of Chinese works must be considerable.

CITIES AND TOWNS.] This extensive portion of Asia contains several cities and towns, generally constructed of wood, and of little antiquity or duration. These shall be briefly mentioned, passing from the west towards the east.

In Little Bucharia appear the cities of Cashgar, Yarkand, Kotun, and Karia. Cashgar was formerly a remarkable town, giving name to a considerable kingdom, the limits of which nearly corresponded with Little Bucharia[3]. This town, though fallen from its ancient splendour, still retains some commerce. Yarkand stands on a river of the same name, which, after a long easterly course, falls into the lake of Lop *.

Turfan, the capital of a detached principality, is a considerable town, which used to be frequented by the merchants passing from Persia to China. Hami, Chami, or according to others Chamil, gives name to a small district in the immense desart of Cobi, and according to Du Halde is a small but populous place †. Some towns occur further to the south, but seemingly are only usual stations for tents, the Monguls preferring the nomadic life.

The ancient city of Karakum has vanished, as already mentioned; but to the east of the great desart, and near the frontiers of China, several Mongul towns appear in the maps. Coucou seems to be the Couchan of Du Halde, a small town seated on a hill near a river which falls into the Hoan-ho. The others are yet more inconsiderable.

The country of the Mandshurs contains many villages and cities, as Hotun Sagalian Oula, so called from its position on that river, in the country of the Tahouria, modernized Daouria; likewise Tsitchikar, already mentioned, with Merguen, Petouna, Kirin Oula, and Ningouta. On the north and east of the great river Amur scarcely the vestige of a village appears. Of those here enumerated Petouna or Pedne was, in the time of Du Halde, chiefly inhabited by Mandshur soldiers and exiles, under the command of a lieutenant general. Ningouta was also the residence of a Mandshur general, and the seat of a considerable trade, particularly in the celebrated plant called ginseng, which abounds in the neighbourhood. Sagalian Oula ‡ Hotan signifies the city of the black river, and is the chief Mandshur settlement on that noble stream[4].

The chief city of Corea is Kinkatao, of which we may be said only to know the name.

[3] Histoire des Tatars, 388.

* According to Petis de la Croix, in his learned notes on Sherefeddin, Yarkand is only another name for Cashgar; but this opinion seems confuted by the letter of the Chinese general. See Independent Tatary. Kotun, whence perhaps cotton derives its name (as muslin from Moussul, the ancient mart,) is also called Chateen, and was a flourishing city in the last century. Bentink, 193. De Guignes in his history of the Huns, vol. 1. part 2. has given a description of Tatary. He says p. xv. that from the mountain Oneauta descends the river Peyoho; on the western bank of which stands the town of Khoten or Kotun, and also the rivers Louyoho and Ouyoho, both of which run on the west of the town. These rivers, he says, derive their names from the precious stones which they roll down from the mountain, and which are found in the autumn when the waters diminish.

† Grosier, in his description of China, 1. 336, gives an interesting account of Hami, which is about half a league in circumference, with two beautiful gates. It stands in a fertile plain, watered by a river, sheltered by hills on the N. The gardens and fields are delightful: and fine agates are found, but the diamonds seem fabulous.

‡ In the Mandshur language Oula signifies a river, as in the Chinese Kiang. Du Halde, iv. 530. *Pira* implies the same. In the Mongul *Muren* is a river; *Alin* a mountain, also *Tabahan*; *Hata* is a rock. In the Tatar or Turkish *Tag* is a mountain, *Daria* a river.

[4] Du Halde. iv. 19.

TRADE.]

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TRADE.] The principal trade of the Mandshur country consists in ginseng, and pearls, found in many rivers which fall into the Amur. Excellent horses may also be classed among the exports. Cashgar was formerly celebrated for musk and gold *. The other towns are rather stations for merchants than seats of commerce. But the emporia of the Russian trade with China must not be forgotten, being on the Russian side Zuruchaitu on the river Argoon, and Kiachta; opposite to which, on the Chinese frontier, are correspondent stations erected of wood.

* Corea also produces gold, silver, iron, beautiful yellow varnish and white paper, ginseng; with small horses about three feet high, ermine, beaver, and fossil salt. Du Halde, iv. 558.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes. —Mountains.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters. —Natural Curiosities.

CLIMATE.] THOUGH the parallel of central Asia corresponds with that of France, and part of Spain, yet the height and snows of the mountainous ridges occasion a degree, and continuance of cold, little to be expected from other circumstances. In climate and productions it is however far superior to Siberia.

FACE OF THE COUNTRY, &c.] The appearance of this extensive region is diversified with all the grand features of nature, extensive chains of mountains, large rivers, and lakes. But the most singular feature is that vast elevated plain, supported like a table, by the mountains of Tibet in the south, and Altaian chain in the north, from the mountains of Belur Tag in the west, to those that bound the Kalkas in the eaſt. This prodigious plain, the most elevated continuous region on the globe, is intersected by some chains of mountains, and by the vast desarts of Cobi and Samo, by others considered as the same, the former being the Mongul, the latter the Chinese name. Destitute of plants and water it is dangerous for horses, but is safely passed with camels. Little has been added to our knowledge of central Asia since D'Anville drew up his maps, from the materials furnished by the Jesuits, in China, in which it would seem that this desart extends from about the 80th° of E. longitude from Greenwich, to about the 110th°, being 30° of longitude, which, in the latitude of 40°, may be 1380 geographical miles: but in this wide space are Oases, or fertile sports, and even regions of considerable extent. On the other hand the main desart sends forth several barren branches in various directions.

AGRICULTURE.] Among the southern Mandshurs, and the people of Little Bucharia, agriculture is not wholly neglected, nor is wheat an unknown harvest. The soil of so extensive a portion of the earth may be supposed to be infinitely various; but the predominating substance is black sand.

RIVERS.] The most important river is that called by the Russians Amur, by the Mandshurs Sagalian Oula. The Amur is deservedly classed among the largest rivers; rising near the Yablonoi mountains, where it is first known by the names of Kerlon and Argoon, and pursuing an easterly course of about 1850 British miles. The Amur is the grand receptacle of the Mandshur streams, among which the most considerable is the Songari, which itself receives the large river Nonni. The Russian waters of Selinga, and Irtish also pervade a part of central Asia. The river Yarkand, perhaps the Oechardes of Ptolemy, has a considerable course before it enters the lake of Lop. The Ili, which falls into the lake of Balkash, is noted in Tataric history.

LAKES.] Some of the lakes are of great extent, as those of Balkash, or Tengis, and Zaizan, each about 150 miles in length. Next is the Koko Nor, by some called Hoho Nor,

Nor, or the blue lake, which gives name to a tribe of the Monguls. *Nor* is the Mongol term for a lake, which by the Mandshurs is styled *Omo*.

MOUNTAINS.] The vast ranges of mountains which intersect central Asia have never been scientifically described, and few of them have even received extensive and appropriated appellations. It is highly probable that some of these ranges far exceed the Alps in height, as Pallas thinks that Elburz, the summit of the Caucasian chain, is higher than Mont Blanc: and probably the mountains of Asia are on as grand a scale as the rivers, and other features of nature. On the west the great chain called Imaus by the ancients, the Belur Tag, or Dark Mountains of the natives, runs from N. to S.

In the eastern country of the Mandshurs the ridges of mountains are laid down in the same direction.

The chief difficulties attend those in the centre. Those on the Russian frontier have been well described; but of the northern mountains of Tibet, and the sources of the Ganges, our knowledge remains imperfect. Still fainter light falls on the ridges which run in an easterly and westerly direction to the north of the great desart. It has already been observed, in describing the mountains of Asiatic Russia, that the great mountain of Bogdo gives source to the upper Irtish, and must therefore be that delineated in Arrowsmith's map of Asia, at longitude 94°, and latitude 47°. Thence a chain runs N. W. called the Golden Mountain, being the main Altaian ridge, while to the S. E. passes a range called Changai. A ridge passing to the west is by the Tatars called Ala-Tau, and sometimes Allakoola, or the Chequered Mountain. From the Arakoola, or Allakoola, the river Ili runs to the north [1].

Further illustrations of this curious and obscure subject may be derived from the map published by Isleniff, a Russian officer, of a great part of western Tatary *. It is, however, to be regretted that the range of mountains, which ought to have been delineated with as much precision as the rivers, are rather faintly indicated. Passing in silence the smaller mountains named in this map, which are very numerous, some remarks may be offered on the larger chains. That of Bogdo runs from S. W. to N. E., about a degree and a half from the lake Lop, or Lok Nor. The chief Altaian chain passes in a more northerly direction, terminating towards the east at the lake of Upsa, whence it proceeds N. W. towards the lake of Altyn; then bending S. W. forms the boundary between the Russian and Chinese empires. But as the greater Altai has little connexion with that extensive frontier, it may be doubted whether Pallas and Pennant have judiciously assigned the name of Altaian chain to the prodigious ridge which divides the Russian empire from the Chinese †. Islenieff marks the lesser Altai as being also denominated Chatai, or Chaltai: and continues the Russian frontier to the west, by the chain of Ulug Tag, whence several rivers flow into the Irtish. He also lays down a range, called Algidym Zano, in the country of the Kirguses of the middle hord.

The chain of Changai branches out at the further termination of the great Altai, passing S. E., as already mentioned. The mountains of Malgan proceed in an opposite direction on the south of the lake of Upsa, and the river Tez. Between the lake Zaizan and Cashgar are many rocky hills, the chief ranges seem to be those of

[1] Tooke's Russia, i. 149.

* Major Rennel is inclined to lend little credit to the Russian maps, because there is, as he conceives, an error of 5° of longitude, Samarcand, for instance, being placed about long. 69° from London, instead of 64°. But in this mode of arguing Ptolemy would not deserve to be once quoted; and the Russian maps seem, on the contrary, preferable to all others, till actual observations can be employed.

† When the Altai joins this grand boundary it is called the Chatai, or Lesser Altai. Hence Cathaian chain might be preferable.

Chamar Daban and Ajagu, to the south and west of that lake; and the snowy range of Musart running E. and W. to the north of Cashgar, and continued by a still greater chain, that of Alak, also called Terek Daban; and towards the south Belur Tag, or the Cloudy Mountains. This last seems to represent the Imaus of the ancients; while the range of Mus Tag, according to Islenieff, runs E. and W. in the 38° of latitude, giving source to several rivers which flow north into that of Irken, or Yarkand. Ptolemy indeed delineates the highest part of the Imaus in the same direction, and derives from it the sources of the Indus, and Ganges; which last river modern discovery deduces from a range 4° more to the south. Islenieff himself is supposed to be in a similar error, when he derives the sources of the Syr and Amu, or Sihon and Jihon, from Belur Tag, or the Cloudy Mountains, omitting a parallel range about two degrees more to the west; yet the space between these two supposed ranges seems idly filled up by what is called the plain of Pamer; and perhaps the Russian geography is preferable. Accordingt o Islenieff, whose plain map may be preferred to any scientific theories, the range of Argjun, or Argun, and Karatau runs N. W. and S. E. between the Sihon and the Talas; while that of Aktau runs S. W. on the south of the Syr, or Sihon *.

The great rivers of Onon and Argoon, with others that flow in an opposite direction into the Selinga, rise from the high ridge of Sochondo, the summits of which consist of large rocks heaped on each other in successive terraces. There are two vast cavities, or abysses, with perpendicular sides, and small lakes at the bottom, which receive the melting snows, and give source to torrents which precipitate themselves with a terrible noise amidst the disjointed rocks. This ridge is clothed with perpetual snow; and, after dividing the rivers of Russian Douria from those that flow into the Baikal, passes S. W. and joins an icy chain which runs into Mongolia †.

There are some forests near the rivers; but in general the extreme elevation and sandy soil of central Asia render trees as rare as in the desarts of Africa.

Botany.] Of the botany of the whole central part of Asia, including the vast territories

* The Allakoola of Mr. Tooke is laid down by Islenieff as the eastern part of the Musart range, on the north of Little Bucharia. But the Musart of Pallas must pass in a different direction.

Some little additional information may be collected from the fourth volume of Du Halde. He observes, p. 23, that the river of Kalka, whence the name of the Kalkas, rises in a famous mountain called Suelki, or Siolki. This name may therefore be applied to the ridge which divides the Kalkas from Chinese Daouria. The river Songari, p. 92, rises in the mountain Champé, (Chan signifies a mountain,) famous as the original border of the Mandshurs, and said to be always covered with snow, whence its name, which signifies the white mountain. This appellation may be applied to the ridge which runs north from Corea on the east of the river Songari. The river Onon, (a name, p. 514, of the Sagalian till joined by the Argoon) rises from the mountains of Kentey, which also give source to the Tula and the Kerlon: p. 522, 523. The Kentey is therefore another name for the mountains of Kinhan, or perhaps more strictly those of Sochondo: and he also mentions those of Altay, and those of Trangha, and Cocoy. His Hangai, to the S. E. of Altay, is the Changai of Pallas, and probably the Trangha is the same name disfigured by an error of the press. The Coco he says is a low chain between the Altay and the Hangai, but this geography is unsatisfactory. He adds that the river Hopto runs along the chain of Cocoy, and falls into the lake of Ekaral, to the west of Hangai, while the lake of Kirkil is to the east of Hangai, and receives two rivers which flow from that mountain. See D'Anville's map of Asia; but that geographer's radical misconception of the width and extent of mountainous chains disfigures all his maps. That of Islenieff greatly differs: but the Cocoy seems the Bogdo. In the jesuitic maps the lake Upsa stands due N. from Ekaral, while it is *six degrees* to the east: and the Upper Irtish runs N. instead of W.

Mr. Bell, i. 427, 8vo. observed a chain of mountains in the N. W. of China, about fifteen miles in breadth, in length above one thousand miles, running N. and S., and encompassing the greater part of China to the N. and W. Where he crossed the sandy desart, p. 405, it was twenty miles broad, but in some places is thirty leagues. This sandy desart should be laid down in the maps like those of Africa.

* Dec. Russes, vi. 248—254, where the last is termed the Gungurtian and Manstricanian mountains. The original German must be obscure, for the French translation, and Mr. Tooke's extracts, sometimes resent an unintelligible phraseology. The Gungur must be the Hongur of D'Anville.

of

of Chinese Tatary, and Tibet, we are yet as in a manner totally ignorant. No European naturalist has even ever passed through, much less explored the vegetable products of these extensive regions. From their elevated situation, and their rigorous winters, it is obvious that no tropical plants, nor even those of the more temperate Asiatic countries are to be expected in their flora; and by the vague accounts of a few travellers combined with the little that we know of the sea coast of Tatary, it would appear that at least the commonest plants are for the most part the same as those of the north of Germany, mingled with a few Siberian species. Hence it seems that the territorial limits of the Indian and Siberian floras are separated from each other by a broad band of European vegetables, which, entering Asia by the Uralian mountains, proceeds in a south-east direction as far as the Tatarian borders, whence it stretches due east quite across the continent, to the river Amur, and the coast of Mandshur Tatary. The southern frontier of Tibet, as it partakes of the climate of India, so it resembles this last in some of its vegetable productions, and for the same reason there are many common features in the floras of Siberia, and the north of Tatary. It is probable also that peculiar species, or even genera may hereafter be found in such an extensive tract. The only indigenous plants that we are as yet certainly acquainted with, except what belong to Siberia, or India, are that well-known and singular fern the Polypodium barometz, called also the *Scythian lamb:* panax quinquefolium, *ginseng*, the favourite drug of China; and rheum palmatum, which at least is one of the plants that furnishes the true *rhubarb*.

Zoology.] The zoology of this wide portion of the globe would supply an infinite theme, in which the camel of the desart might appear with the rock goat of the Alps, and the tiger with the ermine. The wild horse, and the wild ass, and a peculiar species of cattle which grunt like swine, are among the most remarkable singularities. The wild horse is generally of a mouse colour, and small, with long sharp ears.

Mineralogy,] The mineralogy of central Asia has been little explored. Gold is found both in the eastern and western regions, and the former are also said to produce tin. As Russian Daouria exhibits so many valuable substances, it is reasonable to conclude that they equally abound in the Chinese territory, if similar skill and industry were exerted in their detection. The mineral waters, and uncommon appearances of nature, have been little investigated.

ISLAND OF SAGALIAN, OR TCHOKA.

Till this large island was explored by the unfortunate navigator La Perouse, it was supposed to be only a small isle at the mouth of the Amur, the southern extremity being placed by D'Anville about 4°, or 240 geographical miles, to the north of Jesso. By the account and maps of La Perouse, which have since been followed, it is only divided from Jesso by a narrow strait of about 20 miles in breadth, since called the Strait of Perouse. The discovery and account of this large island, which extends from the 46th° of latitude to the 54th°, or not less than 480 geographical miles in length, by about 80 of medial breadth, is the most important portion of that navigator's voyage. The natives seem to approach to the Tataric form; and the upper lip is commonly tatooed blue. Dress, a loose robe of skins, or quilted nankeen, with a girdle. Their huts, or cabins, of timber, thatched with grass, with a fire place in the centre. In the south are found Japanese articles. A little trade seems also known with the Mandshurs, and the Russians. The native name of this large island is Tchoka, that used by the

the Japanese Oku Jesso, perhaps implying further Jesso; while the Russians, who only know the northern part, call it the isle of Sagalian, because it is opposite to the large river of that name. The centre is mountainous, and well wooded with pine, willow, oak and birch; but the shores are level, and singularly adapted to agriculture. The people are highly praised by La Perouse as a mild and intelligent race. The portraits which he gives of three old men with long beards, rather resemble the European than the Tataric lineaments; and La Perouse expressly informs us that they are quite unlike the Mandshurs, or Chinese. He observes as a singularity that their words for *ship*, *two*, and *three* are nearly the same with the English; and for this he refers to the vocabulary, in which however ship is *kahani*: two is indeed *tou*, but three is *tche*. The island of Jesso, and some others to the north of Japan, will be described in the account of that interesting country.

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PART III.

TIBET.

Names. — *Extent.* — *Boundaries and Provinces.* — *Progressive Geography.* — *Religion.* — *Government.* — *Population.* — *Manners.* — *Language and Literature.* — *Cities and Towns.* — *Manufactures and Commerce.* — *Climate and Soil.* — *Rivers.* — *Mountains.* — *Zoology.* — *Mineralogy.* — *Natural Curiosities.*

THE account of this interesting country must unfortunately be limited in the topics, as the materials are far from being ample.

The recent narrative of Capt. Turner's journey shall be selected as the most authentic; but it only embraces a small part, and for the general geography recourse must be had to more antiquated authorities *. Tibet, with its numerous independencies, may in fact still be arranged among the *undiscovered* countries in the centre of Asia.

NAMES.] The name of *Tibet*, which is probably Hindoo, or Persian, is in the country itself, and in Bengal pronounced *Tibbet*, or *Tibt*. But the native appellation is *Puë*, or *Puë Koachim*, said to be derived from *Puë*, signifying northern, and *Koachim*, snow; that is the snowy region of the north [1].

EXTENT.] According to the most recent maps Tibet extends from about the 75th to the 101st degree of longitude, which in the latitude of 30° may be about 1350 geographical miles. The breadth may be regarded as extending from the 27th to the 35th degree of latitude, or about 480 geographical miles †. The original population has not been accurately examined, but as the people of Bootan, which is regarded as a southern province of Tibet, are said to differ essentially and radically from the Hindoos, and somewhat to resemble the Chinese; it may perhaps be concluded that they belong to that grand race of men, which approaches the Tataric, though they cannot be regarded as Mandshurs, Monguls, or Tatars proper.

BOUNDARIES AND PROVINCES.] As Mr. Forster in his travels observes that the material for the shawls of Cashmir is "brought from districts of Tibet, lying at the distance of

* For an account of Nipal see Hindostan: and the authors there mentioned may be consulted for a further account of Tibet.

[1] Turner, p. 5. and 305.

† Probably at least to 37°, which would add 120 g. miles: for Mus Tag is, according to the Russians, the northern boundary of Tibet: and they place that range in 38°.

a month's

a month's journey to the north east [2];" and as Tieffenthaler, in his account of Cashmir, specially mentions that Great Tibet is to the north-east of that country, and Little Tibet to the N. W. [3], there is every reason to infer that our maps are wholly defective in fixing the northern boundary of this country, which ought to be extended to the sources of the rivers of Little Bucharia, between the 37th and 38th degree of N. latitude. Tieffenthaler [4] also mentions that the nearest route to Cashgar would be through Great Tibet, but, this not being permitted, the passage is through Little Tibet, the capital of which, Ascardu, is eight days' journey from the N. limit of Cashmir. Further on is Schakar: and after travelling thence for fifteen days, through thick forests, appears the frontier of Little Tibet. In other fifteen days the caravan reaches Cashgar, formerly the residence of the prince; but it is now at Yarkand, ten days further to the *north* *.

These clear testimonies of two intelligent travellers seem to evince that the northern boundary of Tibet may be safely extended two degrees further than it appears in our best maps, in which there is no portion of Great Tibet to the N. E. of Cashmir. It would seem that the Chinese Lamas, in their great haste to escape from the Eluts, who attacked Lassa [5], were contented with bare reports, not only concerning the sources of the Ganges, but the whole western provinces of Tibet. From their rude drawings D'Anville placed the northern limit of this country (as well as of Cashmir) in lat. 34°, and when Major Rennell judiciously, but cautiously, moved it one degree further to the north, he might safely have extended it at least three degrees. The source of the Ganges stood in the Chinese map lat. 29° 30′: D'Anville found it indispensable to raise it to 32°, and Rennell to 33° 15′.[6] Hence it appears that one radical defect, in that very imperfect and erroneous map, was the great diminution of the latitude. To fill up this deficiency geographers have here introduced the great Sandy Desart of Cobi; which, as appears from Marco Polo, and other travellers, is in the centre of Asia, corresponding in latitude with that of Shamo, on the N. of China, beginning near Yarkand, but spreading into a far wider expanse at the city of Lop, further to the E.[7]

The extracts from Giorgi, and others, concerning Tibet, in Bernoulli's third volume, bear that it is divided into three parts, Upper, Middle, and Lower. Upper Tibet chiefly comprises the province of Nagari, full of horrible rocks, and mountains covered with eternal snow. Middle Tibet contains the provinces of Shang, Ou, and Kiang: while the provinces of Lower Tibet are Takbo, Congbo, and Kahang.

In this division the countries of Lata, or Ladak, (Latac†) and Breguiong, or Bramascion, (perhaps Sirinagur, which abounds with Bramins,) mentioned in another here given, being omitted, it is probable that they constitute, with Nagari, what is called Upper Tibet.

Many of these provinces are again subdivided: for instance Nagari, which is considered as a kingdom of three departments, Sangkar, Pourang, and Tamo (Dam, or Daum?).

[2] Vol. ii. p. 18. [3] Bernoulli, tome i. p. 77. [4] p. 84.

* This last intelligence is new, but as all our maps place Yarkand to the south, the sole testimony of Tieffenthaler cannot be followed. He adds that from Cashgar to Cathay, or the N. W. of China, the caravans occupy two months, a space which agrees with the positions. As little Tibet is to the N. of Cashmir, and is bounded on the E. by Great Tibet, (Bernier) it is clear that the latter must extend further N. than our maps bear.

[5] Du Halde, iv. 577. [6] Rennell, 310.

[7] Paul. Venet. Cap. 43. 44. edit. Muller, 1671, 4to.

† By Desideri's account Lett. Edif. xv. and Astley, iv. 453, Latac forms a kind of detached sovereignty. The town is seven miles N. of the river Lachu, which falls into the Ganges (rather the Indus, for *Ganga* only means the river). Chaparong stands 80 miles S. E. probably on another river which joins the Indus. If Latac, or Chaparong, stood near the Ganges they would be well known to the Hindoo pilgrims, which is not the case.

Shang is on the W. bounded by Nipal. The province of Ou contains Lassa, the capital of Tibet. Kiang is to the north (N. E.) of Ou; and is inhabited by mingled Tibetans and Monguls in tents. Kahang is in the S. E. bordering on the Birmans, and is divided into twelve departments *.

To these must be added the wide region of Amdoa, if it be not the same with Kahang, but it seems more probably to embrace the confines towards China, as the natives are remarkably ingenious, and speak the Chinese language. The country of Hor is situated betwixt Tatary and the provinces of Nagari and Kiang, and seems to be the Hohonor of our maps. In tracing these numerous provinces the map of the Lamas will be found entirely useless. Our Bootan is by the natives styled Decpo, or Takbo: all the countries to the west of which, as Moringa, or Morung, Mocampour, Nipal, Gorca, and Kamaoon, (for Almora is only a city,) are not considered as parts of Tibet. The confusion of Chinese, Mongul, and Tibetan appellations has been a great impediment in the geography of this extensive country; the N. E. part of which was, with the Chinese province of Shensi, before the great wall was extended in this quarter, the celebrated Tangut of oriental history and geography †. On the western side high mountains, covered with perpetual snow, and with all the terrible avalanches, and other features of the Swiss Alps, have in all ages prevented the Persians, and the conquerors of Bucharia from invading this country; while the desarts in the N. E. have proved ineffectual barriers against the Monguls and Eluts. These almost inaccessible western mountains have also prevented travellers from penetrating in that quarter, which is little better known at present than in the time of Ptolemy.

Progressive Geography.] The progressive geography of Tibet chiefly dates from a recent period; for though Ptolemy's knowledge extended to the golden Chersonnese, or Pegu, and the western shores of the Siamese monarchy, yet as his Seres, or the furthest inland people known to him in this quarter were situated in Little Bucharia, there is no room to believe that the snowy mountains of Tibet had been penetrated by the ancients. The Portuguese commerce, with the East Indies, may be said to have first disclosed this ample region, of which however our knowledge, even at this day, is lamentably defective. Yet Tibet seems to have been the southern part of the Tangut of Marco Polo[8], and other travellers. Polo indeed specially describes the province of *Tebeth*, (which he says contained eight kingdoms, with many cities and villages,) as a mountainous country, producing some gold and spices, a large breed of dogs, and excellent falcons.

About 1715 the emperor of China being desirous to obtain a map of Tibet, two Lamas were sent who had studied geometry in a mathematical academy[9]. These lamas drew a map from Sining, in the province of Shensi, to the sources of the Ganges; which was afterwards examined by the Jesuits, and improved by them, so far as their materials would admit. This map, published in the Atlas of Du Halde's work, unfortunately continues almost the sole authority, and is followed with a few variations, by the most recent geographers. It seems but of doubtful credit, especially in the western parts, where the source of the Ganges is confessedly only from the report of some Ti-

* Penna informs us that the secular princes had maps of the country, and it is to be regretted that our envoy did not request one from the Lama.

† In the German work called New Memoirs of the North, of which Pallas published four volumes 8vo. 1783, there is, vol. i. an account of Tibet from the reports of the Lamas to Muller and Pallas. In vol. iv. Hackmann has abstracted all the intelligence concerning this country.

[8] Cap. xxxvi. edit. 1537. Tibet is also mentioned in the travels of Odoricus Utinensis about A. D. 1300, published at Venice 1761, 4to, p. 77.

[9] Du Halde, iv. 571.

betan Lamas[10]; whence it is no wonder that recent accounts seem to evince it to be erroneous, nor is it certain whether the adjacent parts have Lamas or Bramins. In the south the Chinese Lamas certainly never passed the ridge of Himmala; whence Nipal, Bootan, and other countries are omitted; and even the names in general appear rather to be arbitrary Chinese terms than real appellatives of places, so that in fact we may be said to possess no map of Tibet in this the nineteenth century. Other most suspicious circumstances in the pretended Chinese Atlas of Tibet are, that there are no distinct names of small kingdoms, states, or provinces, though from recent accounts these seem particularly to abound in the country; and that the great river Gogra is totally unknown and omitted.

The geography of Asia cannot be said to be complete till we have new and correct maps of the central parts, particularly of Tibet, which may be called the heart of Asia, whence the streams of life flow into the vast southern regions of that extensive country. The sources of the Ganges and Indus, the Sanpoo, and all the prodigious and fertile streams of exterior India, and of China, belong to this interesting region.

History.] The Lama of Tibet was the Prester John of the middle ages, if he was not some nestorian Chan[11]: and this strange appellation was as strangely transferred by Portuguese ignorance to the emperor of Abyssinia. Polo also informs us that Tibet had been ravaged by the Monguls, so that in his time it was almost desolate. The quiet succession of the lamas would afford few materials for history; and the petty secular chiefs * of distinct provinces or kingdoms may perhaps sometimes be traced in the Chinese or Hindoo annals, but would little interest an European reader. As the tombs and monasteries are often constructed of stone, some may remain of remote antiquity. But the idols, cut in the rocks, are little calculated to impress travellers with the idea of much perfection in the arts.

Religion.] The religion of Tibet seems to be the schismatical offspring of that of the Hindoos[12], "deriving its origin from one of the followers of that faith, a disciple of Budh, who first broached the doctrine which now prevails over the wide extent of Tatary. It is reported to have received its earliest admission in that part of Tibet bordering upon India, (which from hence became the seat of the sovereign lamas;) to have traversed over Mantchieux Tatary, and to have been ultimately disseminated over China and Japan. Though it differs from the Hindoo in many of its outward forms, yet it still bears a very close affinity with the religion of Brahma, in many important particulars. The principal idol in the temples of Tibet is Mahamoonie†, the Budha of Bengal, who is worshipped under these and various other epithets, throughout the great extent of Tatary, and among all the nations to the eastward of the Berhampooter. In the wide extended space, over which this faith prevails, the same object of veneration is acknowledged under numerous titles; among others he is styled Godama, or Gowtama, in Assam and Ava; Samana in Siam; Amida Buth in Japan; Fohi in China; Budha, and Shakamuna in Bengal, and Hindostan; Dherma Raja, and Maha-

[10] Du Halde, iv. 577. [11] Gibbon, viii. 344.

* Yet Tibet was for some time subject to secular kings, called Tsan Pa; and the lama resided at Lassa with a power similar to that of the spiritual prince of Japan. The succession of kings and lamas begins about 1340 years before Christ, Giorgi, p. 296; but about 1100 after Christ the Chinese emperor gave to a celebrated lama the regal power, ib. 316. Those Monguls called Eluts, conquered the secular prince, and transferred the whole power to the lama. (Du Halde, iv. 50.) See also, in the same author, iv. 570, an account of the disputes which arose between the ancient, or red lamas, and the yellow, who, by the influence of China, obtained the ascendancy. In 1792 the Nipalese having committed great ravages in Tibet, the emperor of China sent an army to protect the lama; in consequence of which the Chinese have established military posts on the frontiers, so that the intercourse between their country and Bengal is now precluded. Turner, 441. [12] Turner, p. 306.

† "This term is Sanscrit, and literally signifies Great Saint."

moonie

moonie in Bootan, and Tibet. Durga and Kali; Ganeish the emblem of wisdom; and Gartikeäh with his numerous heads and arms, as well as many other deities of the Hindoo mythology, have also a place in their assemblage of gods.

"The same places of popular esteem, or religious resort, as I have already hinted, are equally respected in Tibet and in Bengal; Praag, Cashi, Durgeedin, Saugor, and Jagarnaut, are objects of devout pilgrimage; and I have seen loads of the sacred water taken from the Ganges travelling over these mountains, (which by the bye contribute largely to its increase,) upon the shoulders of men whom enthusiasts have deemed it worth their while to hire at a considerable expence for so pious a purpose.

"As far as I am able to judge respecting their ritual, or ceremonial worship, it differs materially from the Hindoo. The Tibetians assemble in chapels, and unite together in prodigious numbers to perform their religious service, which they chant in alternate recitative, and chorus, accompanied by an extensive band of loud and powerful instruments. So that whenever I heard these congregations they forcibly recalled to my recollection both the solemnity and sound of the Roman Catholic mass."

Perhaps this similarity may arise from the nestorian form of Christianity, supposed to have anciently made some progress in this country. There are numerous monasteries containing crowds of *gylongs*, or monks, with a few *annees*, or nuns.

GOVERNMENT.] The ruling government is the spiritual, though the lama was accustomed to appoint a *tipa*, or secular regent, a right which has probably passed to the Chinese emperor. In Bootan, generally, considered as a province of Tibet, there is a raja, or prince, called Daeb, whose authority however is far from being firm, or extensive. The laws must, like the religion, bear some affinity to that of the Hindoos.

POPULATION.] No estimate of the population of Tibet seems to have been attempted, but as the country may be said to be wholly mountainous, and the climate excessively cold, even under the 27th degree of latitude, (the influence of mountains being far superior to that of imaginary zones,) the people are thinly scattered, and the number of males far exceeds that of females. From the ease with which the conquest was effected by the Eluts, and other circumstances, it can scarcely be conceived that a monarch of all Tibet could have brought into the field an army of more than 50,000; and allowing that (exclusive of the numerous monks) only every tenth person assumed arms, the population would be half a million, a circumstance which will not surprize those who consider that a few families in central Asia assume the name of a nation. But this number is probably far too small; and it can only be said that the population seems scanty. The ancient nomadic crowds are now reduced to a small number, from the extensive bands who followed their victorious chiefs having settled in more civilized countries, and from the natural progress of human affairs, which leads mankind to exchange a severe climate, and barren soil, for more fertile, and favoured regions. From these and other causes the population of a country may become exhausted, as well as its vegetation. Even the numerous armies of the Hunnish and Mongul victors were chiefly supplied with recruits from more southern countries, previously vanquished: the miseries of war being the greatest source of soldiers.

REVENUES.] The revenues of the lama, and of the secular princes, seem to be trifling; nor can Tibet ever aspire to any political importance, except in the improbable case that a supposed emperor of Hindostan were carrying on war against China. In a commercial point of view, friendship and free intercourse with Tibet might open new advantages to our settlements in Bengal; and in this design repeated envoys to the lama were sent by Mr. Hastings, a governor who possessed the most enlarged and enlightened mind, and an active attention to the interests of his country.

CHARACTER.] Mr. Turner represents the character of the Tibetians as extremely

gentle and amiable. The men are generally stout, with something of the Tataric features, and the women of a ruddy brown complexion, heightened like the fruits by the proximity of the sun, while the mountain breezes bestow health and vigour.

Marriage Ceremonies.] "The ceremonies of marriage are neither tedious nor intricate in Tibet[13]. Their courtships are carried on with little art, and quickly brought to a conclusion. The elder brother of a family, to whom the choice belongs, when enamoured of a damsel, makes his proposal to the parents. If his suit is approved and the offer accepted, the parents, with their daughter, repair to the suitor's house where the male and female acquaintance of both parties meet, and carouse for the space of three days, with music, dancing, and every kind of festivity. At the expiration of this time the marriage is complete. The priests of Tibet, who shun the society of women, have no share in these ceremonies, or in ratifying the obligation between the parties. Mutual consent is their only bond of union; and the parties present are witnesses to the contract, which, it seems, is formed indissolubly for life. The husband has it not in his power to rid himself of a troublesome companion, nor the wife to withdraw herself from the husband, unless indeed the same unison of sentiment that joined their hands should prompt their separation; but in such a case they are never left at liberty to form a new alliance. Instances of incontinency are rare, but if a married female be found to violate her compact the crime is expiated by corporal punishment, and the favoured lover effaces the obloquy of his transgression by a pecuniary fine."

It is a remarkable characteristic of the country that polygamy here assumes a different form from that of other oriental regions; the women being indulged in a plurality of husbands, instead of the reverse. It is the privilege of the elder brother to select a wife, who stands in an equal relation to his other brothers, whatever may be the number[14]. The same custom is said to have been clandestinely practised at Venice, from views of family pride, united with poverty; but in Tibet it is reported to be founded in the great paucity of females, when compared with the number of males, though a vast quantity of the latter be buried in the monasteries.

Burials.] Such is the respect paid to the lama, that his body is preserved entire in a shrine; while those of the inferior priests are burnt, and their ashes preserved in little hollow images of metal. But in general the dead bodies are exposed to the beasts and birds of prey, in walled areas; and an annual festival is held, as in Bengal and China, in honour of the dead.

A curious idea of the manners and customs of the Tibetans may be formed from Mr. Turner's account of his interview with the lama, then an infant not capable of speech; for, in the spirit of the eastern metempsycosis, they suppose that the soul of the lama passes from his late body into another, which they discover by infallible marks.

Upon the whole, the Tibetans appear to have made a considerable progress in civilization; but the sciences continue in a state of imperfection, the year for instance being lunar, and the month consisting of29 days.

Language.] The language of Tibet is reported by Du Halde to be the same with that spoken by the people of Sifan, on the western frontiers of China; but as this province is itself sometimes included in Tibet, the information becomes vague; nor have the origins of the Tibetian speech been properly investigated. The literature is chiefly of the religious kind, the books being sometimes printed with blocks of wood, on narrow slips of thin paper, fabricated from the fibrous root of a small shrub. In this practice they resemble the Chinese; while the Hindoos engrave their works with a steel stylus upon the recent leaves of the palmira tree, (borassus flabelliformis,) affording a fibrous

[13] Turner, 352. [14] Du Halde and Turner.

substance,

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substance, which seems indestructible by vermin [15]. The printed and formal letters are called the *uchen*; while those of business and correspondence are styled *umin*. From Mr. Turner's account it would seem that the writing runs from the left to the right, as in the languages of Europe.

The gylongs, or monks, pass through a regular education; and it is to be supposed sometimes teach children not destined to religious confinement.

CITIES AND TOWNS.] Of the cities and towns of Tibet little is known. The capital is Lassa: and several other names in the southern part assume the character of towns in the maps, though probably mere villages. Tassisudon, for instance, only consists of scattered groups of hovels. There being little commerce, there is no middle class of people, but the transition is rapid from the miserable hut to the stone palace or monastery.

LASSA.] Lassa, the capital of Tibet, is situated in a spacious plain, being a small city, but the houses are of stone, and are spacious and lofty [16]. The noted mountain of Putala, on which stands the palace of the Lama, is about seven miles to the east of the city. As *La* means a hill in the native tongue, this name may imply the hill of Pouta or Boodh. To the north of Lassa appears another vast range of mountains, covered with snow, which are clearly seen from Kambala, a very high mountain on the north of the lake of Iandro or Palti. Lassa is in the province of Ou, and almost in the centre of Tibet [17].

EDIFICES.] Among the edifices the monasteries may be first mentioned. Mr. Turner describes that of Teshoo Loomboo, as containing three or four hundred houses, inhabited by monks, besides temples, mousoleums, and the palace of the sovereign pontiff. The buildings are all of stone, none less than two stories in height, with flat roofs, and parapets composed of heath and brushwood, probably to emit the melting snow. The centre window projects beyond the wall, and forms a balcony. Some of the palaces and fortresses are described and delineated by Mr. Turner; and the architecture seems respectable. Bridges occur of various fantastic forms; sometimes consisting of chains, drawn from precipice to precipice; sometimes of beams, one end being fixed in the shore, while the other successively increases its projection till the uppermost timbers support a short passage of planks, thus resembling the upper section of an octagon. The roads amidst the rocky mountains resemble those of Swisserland, and are particularly dangerous after rain.

MANUFACTURES.] The chief manufactures of Tibet seem to be shawls, and some woollen cloths; but there is a general want of industry; and the fine undermost hair of the goats, from which shawls are manufactured, is chiefly sent to Cashmir. The principal exports are to China, consisting of gold dust, diamonds, pearls, coral, (which is mentioned by Marco Polo as a commodity of the country [18]) lamb skins, some musk, and woollen cloths. Many of the Chinese imports are manufactured. To Nipal, Tibet sends rock salt, tincal or crude borax, and gold dust; receiving in return base silver coin, copper, rice, and coarse cotton cloths. Through Nipal is also carried on the chief trade with Bengal, in gold-dust, tincal, and musk. The returns broad cloth, spices, trinkets, emeralds, sapphires, pheirosa or lazulite, jet, amber, &c. With Asam in the S. E., there is no intercourse; and the little trade with Bootan may rather be regarded as internal.

TRADE.] The trade with China, which is the principal, is chiefly conducted at the garrison town of Sining, in the western extremity of the province of Shensi, where

[15] Turner, 323. [16] Rennell, 306. [17] Bernoulli, iii. 227.

[18] ii. 37. Whence was this coral? It was used as money. Can it have been from the large lakes? German travellers sometimes call jasper *coral*.

tea

tea is greedily bought by the Tibetans. There is no mint in Tibet, as such an institution is prevented by religious prejudices; but the base silver of Nipal is current throughout the country.

CLIMATE.] The climate of Bootan may be said to be temperate, when compared with that of Tibet Proper; yet the winters are very severe even in the former country. "In the temperature of the seasons in Tibet a remarkable uniformity prevails, as well as in their periodical duration and return. The same division of them takes place here as in the more southern region of Bengal. The spring is marked, from March to May, by a variable atmosphere; heat, thunder storms, and occasionally with refreshing showers. From June to September is the season of humidity, when heavy and continued rains fill the rivers to their brim, which run off from hence with rapidity to assist in inundating Bengal. From October to March a clear and uniform sky succeeds, seldom obscured either by fogs or clouds. For three months of this season a degree of cold is felt, far greater perhaps than is known to prevail in Europe. Its extreme severity is more particularly confined to the southern boundary of Tibet, near that elevated range of mountains which divides it from Asam, Bootan, and Nipal [19]."

Thus the distinguishing characteristic of the climate is that extreme and dry parching cold, which, under the latitude of 26°, near the torrid zone of antiquated geography, rivals that of the Alps in latitude 46°.

FACE OF THE COUNTRY.] From the same intelligent traveller, we learn that Bootan, with all its confused and shapeless mountains, is covered with eternal verdure, and abounds in forests of large and lofty trees [20]. The sides of the mountains are improved by the hand of industry, and crowned with orchards, fields, and villages. Tibet Proper, on the contrary, exhibits only low rocky hills, without any visible vegetation, or extensive arid plains of an aspect equally stern; while the bleak and cold climate constrains the inhabitants to seek refuge in sheltered vales and hollows, or amidst the warmest aspects of the rocks. Yet Tibet produces great abundance and variety of wild fowl and game; with numerous flocks of sheep and goats, and herds of cattle, and is infested by many beasts of prey: while in Bootan few wild animals are found except monkeys, and a few pheasants. Tibet Proper must indeed be considered as a mineral country, the mountains presenting a peculiarly naked aspect, which indicates that they contain rich ores, for the fumes of large masses of metal are poisonous to vegetation.

SOIL.] The nature of the soil here prohibits the progress of agriculture. The vales are commonly laid under water on the approach of winter: in the spring they are ploughed and sown, while frequent showers, and a powerful sun, contribute speedily to mature the crops [21]. The autumn being clear and tranquil, the harvest is long left to dry on the ground; and when sufficiently hardened is trod out by cattle. The course of cultivation is wheat, peas, and barley; rice being confined to a more southern soil.

RIVERS.] The chief river of Tibet, is, beyond all comparison, the Sampoo or Berhampootar, which rising in the western region, from the same lofty mountains that give source to the Ganges, proceeds in an E. and S. E. direction for about the space of 1000 English miles, to the confines of Tibet and Asam, where it bends S. W., and flows into the estuary of the Ganges, after a further course of about 400 British miles.

The Hoan Ho and Kian Ku of the Chinese also derive their origin from the eastern boundaries of Tibet. Of the other rivers little is known; but the great Japanese river

[19] Turner, 300. [20] P. 216. [21] Turner, 354.

of

of Cambodia, or Maykaung of Laos; that of Nou Kia, supposed to pass near Martaban into the gulph of Pegu; and the Irrawady of this last country, are all supposed to derive their sources from the mountains of Tibet, which may be styled the Alps of Asia. Nor must it be forgotten that another large river, called the Sardjoo or Gagrá, which after a course of about 600 miles, nearly parallel on the E. with that of the Ganges, joins it near Chupra, also derives its spring from the lofty western mountains of Tibet.

Lakes.] These Alpine regions contain, as usual, many lakes, the most considerable being represented under the name of Terkiri, about 80 British miles in length, and 25 broad. The Chinese lamas, who drew up the map of Tibet, which geographers still copy in the want of superior authorities, have also depicted many other lakes in the northern parts of the country; where there certainly exists one very singular, which yields the tincal or crude borax. Equally uncommon is the lake to the S. of Lassa, which our maps call Jambro or Paltè, the last appellation probably from Peiti, a village which the original atlas of Du Halde places on its margin. This strange lake is represented as a wide trench, of about two leagues broad, every where surrounding an island of about twelve leagues in diameter; if true, a singular feature of nature. Even the smaller lakes in the south of Tibet Proper are in the winter frozen to a great depth.

Mountains.] The vast ranges of Tibetian mountains have already been repeatedly mentioned; but there is no accurate geographical delineation of their course and extent. Those in the west and south seem to bend in the form of a crescent, from the sources of the Ganges to the frontiers of Asam, in a N. W. and S. E. direction. To the N. of Sampoo a parallel and yet higher ridge seems to extend, the northern extremities abounding with large frozen lakes. In Du Halde's atlas, which was drawn up by the able D'Anville, the mountains which give source to the Ganges are called those of Kentaisse, and seem to belong to the northern chain known by many local names; but the chief elevation appears as usual to be central, to the south of the lake Terkiri, being called Koiran, an appellation which might therefore be scientifically extended to the whole chain, if that of Kantel (the western part) be rejected. The southern range also presents many names of distinct mountains, but the Hindoo name of Himmala is preferable *.

From these great ranges many branches extend N. and S. as in the Alps, and their names may perhaps be traced, but with little accuracy, in the general map of Tibet, and atlas of the provinces, drawn up by D'Anville from the sketches of the missionaries, and already repeatedly quoted.

Forests.] Bootan, the southern province of Tibet, abounds with forests containing many European trees, though the oak is wanting; and several peculiar to Asia.

Nipal, the adjoining province to the west, probably presents similar features. The high snowy mountains which contain the sources of the Ganges are perhaps barren of vegetation, a character generally applicable to Tibet Proper.

Zoology.] In Bootan few wild animals are observable, except monkeys: but Tibet abounds with game of various descriptions. The horses are of a small size, or what we term ponies, but spirited to a degree of obstinacy. The cattle are also diminutive. The flocks of sheep are numerous, commonly small, with black heads and legs; the wool soft, and the mutton excellent. It is a peculiarity of the country that

* The southern range is the Himaloya (Imaus?) of Hindoo mythology. The Chumularee near Phari, on the N. frontier of Bootan, is one of the highest peaks Turner, 203.

Du Halde's map of Tibet seems to exclude Bootan, and several provinces on the S. W.

the latter food is generally eaten raw. When dried in the frosty air it is not disagreeable, in this state, to an European palate [22].

The goats are numerous, and celebrated for producing a fine hair, which is manufactured into shawls, and which lies beneath the exterior coarse coat. Nor must the singular breed of cattle be forgotten, called Yak by the Tatars, covered with thick long hair; the tail being peculiarly flowing and glossy, and an article of luxury in the east, where it is used to drive away the flies, and sometimes dried for ornaments. These cattle do not low; but, when uneasy, make a kind of grunting sound, whence the breed is called the *bos grunniens*.

The musk deer delights in intense cold. This valuable animal has two long curved tusks, proceeding downward from the upper jaw, which seem intended to dig roots, his usual food. The figure of the body somewhat resembles the hog, while the hair approaches the quills of the porcupine. The musk, which is only found in the male is formed in a little tumour at the navel; and is the genuine and authentic article so styled, being commonly black, and divided by thin cuticles [23].

The wild horse is also classed among the quadrupeds of Tibet. The tiger may perhaps appear in the S. E., but the other beasts of prey, as the ounce, &c. are of small size, as may be expected in so cold a climate.

The lakes abound with water fowl in the summer, many of which may perhaps be new to zoology; and little is discovered concerning the fish and insects of this singular country.

Mineralogy.] The mineralogy is better known from the account appended to Mr. Turner's Journey in 1783, from which it appears that Bootan does not probably contain any metal except iron, and a small portion of copper; while Tibet Proper, on the contrary, seems to abound with rich minerals. Gold is found in great quantities, sometimes in the form of dust in the beds of rivers, sometimes in large masses, and irregular veins, commonly in a gangart of petrosilex or of quartz. There is a lead mine, two days' journey from Teshoo Lumboo, the ore being galena, probably containing silver. Cinnabar, rich in quicksilver, is also found; and there are strong indications of copper. Rock salt is another product of Tibet. But in general the metals cannot be worked, as there is a complete deficiency of fuel; and coal would be far more precious than gold.

The most peculiar product of Tibet is tincal, or crude borax; concerning which Mr. Saunders, who accompanied Mr. Turner, gives the following interesting information. "The lake, from whence tincal and rock salt are collected, is about fifteen days' journey from Teshoolumboo, and to the northward of it. It is encompassed on all sides by rocky hills, without any brooks or rivulets near at hand; but its waters are supplied by springs, which being saltish to the taste are not used by the natives. The tincal is deposited or formed in the bed of the lake: and those who go to collect it dig it up in large masses, which they afterwards break into small pieces, for the convenience of carriage, exposing it to the air to dry. Although tincal has been collected from this lake for a great length of time, the quantity is not perceptibly diminished; and as the cavities made by digging it soon wear out, or fill up, it is an opinion with the people that the formation of fresh tincal is going on. They have never yet met it in dry ground, or high situations, but it is found in the shallowest depths, and the borders of the lakes; which deepening gradually from the edges towards the centre, contains too much water to admit of their searching for the

[22] Turner, 302.

[23] Turner, 200. This animal rather resembles a large hare. See a good figure in Gladwin's Oriental Miscellany, Calcutta, 1798, 8vo. p. 129.

tincal conveniently; but from the deepest parts they bring rock salt, which is not to be found in shallows, or near the bank. The waters of the lake rise and fall very little, being supplied by a constant and unvarying source, neither augmented by the influx of any current, nor diminished by any stream running from it. The lake, I was assured, is at least 20 miles in circumference; and, standing in a very bleak situation, is frozen for a great part of the year. The people employed in collecting these salts are obliged to desist from their labour so early as October, on account of the ice. Tincal is used in Tibet for soldering, and to promote the fusion of gold and silver. Rock salt is universally used for all domestic purposes in Tibet, Bootan, and Nipal[24]."

MINERAL WATERS.] There are many mineral waters in various parts of this extensive country; nor is their salutary use unknown to the natives.

NATURAL CURIOSITIES.] The natural curiosities of this alpine region must of course be numerous, but they have been little explored. Towards the north of Tassisudon Mr. Saunders observed a singular rock, forming in front six or seven angular semi-pillars of great circumference, and some hundred feet in height[25]. This natural curiosity was in part detached from the mountain, and projected over a considerable fall of water, which added much to the grand picturesque appearance of the whole. He adds that the rock is laminated, and might be formed into slate; and iron stones being found in the vicinity, it is probable that these pilastres may, like those of basalt, arise from the influence of that metal.

One of the most interesting works concerning this celebrated country is that of Father Giorgi, published at Rome in 1762; but it is a prolix and ill digested production, chiefly occupied with comparisons between the religion of Tibet, which is a mixture of the Hindoo and Christian system, with that of the Manichees and other creeds. The short description of Tibet is mostly compiled from the papers of Pinnabilla, a preceding missionary, and only occupies about nine pages, followed by an itinerary from the mouth of the Ganges to Lassa.

According to this brief topography, Tibet is bounded on the east by China; and Tracenton, a province which produces abundance of tea, and has, since the year 1720, been incorporated with the Chinese empire. On the south are Bengal, Lotenke, Altibary, Mon, Brukpa, Lhohoba, Lhokhaptra, Sciapado, Bha. The countries on the west are Cashmir, Nekpal, Moronga, while on the north are great Tatary, the Usbeks, Cashur, Jonkar, as far as Jerkend and Cokonor *.

The number of inhabitants in 1730, our author, or rather Pinnabilla, computes at thirty-three millions, and the soldiers six hundred and ninety thousand, both of which numbers seem exaggerated, if not ridiculous, for Tibet has been often conquered by the Chinese with armies not exceeding forty thousand men. The province of Amdoa being excepted, three families presented one soldier, but if there were only one son in the three families he was not constrained.

The kingdoms and provinces were: Lauta or Ladak, which, towards the west, bounded on Cashmir, towards the east Ngari, and towards the north on the Usbeks.

Ngari is divided into three provinces; Ngari Sangkar, Ngari Purang, Ngari Tamo.

Ngari Sangkar, towards the west, borders on Ladak, towards the north on Cashgar and Tatary, towards the east Ngari Purang. But when he mentions the Mogul's dominions as bounding this and the two other provinces on the south, there seems to be some gross inaccuracy, or want of precision.

[24] Turner, 406. [25] P. 398. * P. 416.

Ngari Purang is limited on the north-west by Ngari Sangkar, and on the east by Ngari Purang.

Ngari Tamo has on the west Ngari Purang, and on the east Tzhang. The boundaries of both these provinces are vaguely said to be the Tatars on the north, and the Mogul's dominions on the south.

The kingdom of Tzhang, towards the west, borders on Nekpal, towards the north Ngari Tamo, towards the south Lho-Tenki, and Bregion, and towards the east the province of U, which word or letter implies the navel, as being the centre of the Tibetan dominions. The chief town of the province of Tzhang is Sgigatzi.

The province of Bregion, or Bramascion, has on the north Tzhang, on the south Mon, Altibary, Brukpa or Laltopivalo, on the south-east Lhova, on the east Caco and Combo, while on the west are Moronga and Nekpal.

The province of U, of which the metropolis is Lassa, towards the west, borders on Tzhang, and the high mountain of Cambala; towards the east, Sciarbigonti; towards the south, Jalha and Takpo; towards the north, on Kiang in Ratren and Talung.

Kiang has on the west Ngari, on the north Coconor, on the east Cahang, on the south the province of U. In this division is the duchy of Dam, inhabited by Tibetans and Tatars in tents. Beyond Dam, during a journey of forty-two days, no towns occur, the scattered tribes living in tents; and one of their common animals being the Yak, or *bos grunniens*, elsewhere a rare species of cattle. After this journey of forty-two days, the travellers find themselves on the bank of Bicihu, a large river which is passed in boats made of skins. After sailing a whole day, they rest, during the night, in an isle, and rising with the dawn, they arrive on the other side at noon. This great river is scarcely reconcileable with our little knowledge concerning the geography of these countries, and it is probable, that the native term implies a lake as well as a river. A journey of an entire month is necessary, according to our author, to conduct the traveller from this water to Zoloma, whence in five days he arrives at Coconor, or the northern boundaries of this Tibetan province of Kiang.

The province of Takpo is very large, and is subdivided into seven Takpos. It has on the north the province of U, on the south Combo, on the east Cahang, on the west Tzhang.

Combo, towards the north, borders on Takpo, towards the east on Cahang, towards the west on Bregion and Lhoba, towards the south Lho-Kaha-Ptra, which name implies the people of the south with slit lips.

Kiang has on the west Bicun, Takpo, Combo, on the north Coconor and Kiang, on the east Tarcenton, China, and Amdoa, while on the south are Bengal, Pegu, and Siam. But the last limits are uncertain, as the Tibetans are suspicious of any geographical questions tending, as they imagine, to the invasion of their country. Kiang is divided into twelve inferior provinces or districts, of which the names and boundaries are given, except four, and Pinnabilla in vain desired leave to inspect the maps painted on the walls of the royal residence at Laprang.

Amdoa is a kingdom forty-five days' journey from Lassa. It is bounded by China on the east, by Coconor and Kiang on the north, by Kahang on the west, and by Tunquin, or rather Pegu and China on the south. The provinces are fourteen, of which the names are given, but not the boundaries. The people use the Tibetan language, and are very ingenious, most of the great lama's professors and celebrated doctors being of Amdoa.

Hor lies, as it were, in the middle between Tatary, Ngari, and Kiang. The people are rather Tatars than Tibetans, but they are subject to Tibet.

Such is the essence of this topography, which short as it is, is yet sometimes interrupted

rupted with extraneous erudition. The dryness of the subject can only be excused by the wish of adding somewhat towards our imperfect knowledge of this interesting country.

The itinerary which follows this description is also chiefly drawn from the papers of Pinnabilla, a capuchin friar, who, as it here appears, died in 1747, and was buried at Patan; he informs us that Nekpal is divided into three provinces, Patan, Batgao, and Katmandu, governed by petty princes, who are always at war with each other. Between Nekpal or Napal and Bettia was the kingdom of Maquampur, rather a capital city. The city of Katmandu is called Jangbu by the people of Tibet. Our traveller found the road extremely difficult, being often carried over dreadful precipices, and at one place, the only passage is across a stone of sixteen feet in length, very much inclined, and wet with water ousing from the mountain. As some security from falling a dreadful height, little holes are cut in which the traveller plants his heel. So numerous are the torrents, that twenty-nine bridges occurred in the space of sixteen miles. The old road to Lassa passed through Bramascion, and was far more convenient.

Langur, a high mountain, rises thirty days' journey on the south of Lassa. At Tzuenga three roads meet, one proceeding north to Ngari, another east to Sgigatzi, while the other passes Kiangsi. Upon that leading to Sgigatzi occurs Sechia a city, and Sgigatzè is the residence of a second grand lama. Our author's account of these three roads is almost unintelligible, he being prolix in describing trifles, but brief and obscure when he treats of solid or momentous objects.

The lake of Paltè or Jamdro, a singular feature of Tibet, is about three hundred miles in circumference, or eighteen days' journey of twenty miles each; it is situated about three days' journey to the south of Lassa. In the middle there is a series of hills and isles, on the south of which was the convent of the great female lama, Turcepamo, who was adored as a deity, and received with supreme pomp when she visited Lassa. On the north of this lake stands Cambala, a mountain of great height, and, at a distance of seven miles, runs the river Sampo or Burrampoot, which is here five hundred feet in breadth. From the river to Lassa are twenty-four miles. The royal palace at Lassa is called Laprang, where, among other ornaments, are maps of the various provinces, painted about 1665, by the orders of the king Tisri, on sixteen walls; Laprang is also one of the celebrated academies or schools of Tibet, which are frequented by the youth of many surrounding countries, even as far as Cashgar, Yarkend, Camul, Turfan, nay, some from Coconor, Amdoa, and China. The course of studies employs twelve years occupied in logic, astronomy, philosophy, medicine, and above all the theology of Boud or Xaca. In the city of Lassa were many foreign merchants, and the women had recently become more polished by their conversation with the Chinese. According to our author, the men of Tibet have no beard, whence the priests adorn their chins with borrowed hair.

His hints concerning the provinces are very imperfect. He observes, that "wine is made in Ngari and upper Tibet, though there be vast rocks and mountains covered with perpetual snow." According to report, from Cashmir to Lassa is a journey of four months, and the same space extends from Lassa to Pekin. Mines of gold occurred in the provinces of U, Tzhang, Kiang, Takpa, Combo, and Khang or Cahang. Silver was found only in the province of Tzhang, and mercury in that of Cahang, but iron, copper, and zink, were common; "the rivers produce borax in great quantity, rising from their bottoms like coral," an account which may deservedly seem doubtful to the naturalist.

These scattered observations may not be found un useful concerning a country so little known.

Before closing this account, it must be observed thatthere is a district to the N. W. of Cashmir, called Little Tibet, and which is supposed to contain the chief source of the Indus. But of this country, which is also represented as a portion of the Chinese empire, little or nothing is known; and even its very situation seems doubtful, for D'Anville, in his map of Asia, has placed it to the N. E. of Cashmir, thus representing it as the N. W. extremity of Tibet Proper. But Little Tibet is probably on the N. and N. W. of Cashmir, being divided from Great Tibet by a high mountainous ridge; and by a yet higher chain, that of Belur, from Great Bucharia. It is said to be a very mountainous and poor country, pervaded by the Indus, and in the north full of forests. The capital is Ascardu; and further to the north is Schakar, as already mentioned in the observations on the boundaries of Great Tibet. Temir-kand, or the fortress of iron, seems to command the pass between Great and Little Tibet: and the two Gangas of the Chinese maps (supposed sources of the Ganges) are probably rivers which join the Indus from the east.

JAPAN.
SEA OF JAPAN
PACIFIC OCEAN
COREA
Cape Sangaar
Firojaki
Omanux
Akita
Mitsuha
Nambo
Too sima
Yanazawa
Ayzu
Sacata
Sherida
Awa sima
Joolai sima
DEWA
Shidaibania
Sado
Cape Noto
NOTO
Nayma
Niyata
JETSINGO
SIMOTSKE
Cape Kennis
JETSIU
KODSKI
KAGA
Canazawa
Gasima
Ramjor Hoak
SIMOSA
FIDA
KAY
MUSASI
YEDO
Taigo Hoak
Welwich Baght
KABSUSA
Sand. Point
Long Koan
Kang
Singtcheon
Tsiencheon
Saupou
Pinghai
Tsyclanl
Quelpart
Chin-hai
Coast of Corea
Strait of Corea
Tsusima
Iwakosima
Idzumo
Koyzima
Dacasima
IWAMI
BITSIU
BINGO
NATO
SUWO
SANUKI
AWA
IJO
TOSSA
FOKI
INABA
TASIMA
TANBA
FARIMA
MIMASACA
BISEN
SITZ
IGA
ISJESMA
OMI
WAKASA
TANGO
Oki
Fakata
Simanaseki
Matsuura
Tsikudsen
Budsen
Fidsen
Bungo
Figo
Figa
Satsuma
Osumi
Amakusa
Nagasaki
Arima
Omura
Firando
Goto Isles
Tanega
Fatsisio
Cape Ava
Oxima
Gobrookon
Rylandeo
Clippe
Nokasima or Burning Isle
Mijarisima
Simanoura
Matsjamma
Tosa
Awadsi
Walasjama
Kinokisi
Kumano
Kiusiu
Kirune
Kamire
Sienosi
Tsikuzen
Buzen
Bungo
Nuga
Ximabara
Uto
Arima
Sira
Nagasaki
Amakusa
Osumi
Satsuma
Firando
Matsuura
Fakata
Simanaseki
Oki
Quelpart
Tsusima
Iwakosima
Koyzima
Dacasima
Chin-hai
Tsiencheon
Singtcheon
Long Koan
Kang
Saupou
Pinghai
Tsyclanl
Coast of Corea
Strait of Corea
Cape Sangaar
Firojaki
Omanux
Akita
Mitsuha
Too sima
Yanazawa
Ayzu
Sacata
Sherida
Awa sima
Joolai sima
DEWA
Shidaibania
Sado
Cape Noto
NOTO
Nayma
Niyata
JETSINGO
SIMOTSKE
Cape Kennis
JETSIU
KODSKI
KAGA
Canazawa
Gasima
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FOKI
INABA
TASIMA
TANBA
FARIMA
MIMASACA
BISEN
SITZ
IGA
ISJESMA
OMI
WAKASA
TANGO
Oki
Fakata
Simanaseki
Matsuura
Tsikudsen
Budsen
Fidsen
Bungo
Figo
Figa
Satsuma
Osumi
Amakusa
Nagasaki
Arima
Omura
Firando
Goto Isles
Tanega
Fatsisio
Cape Ava
Oxima
Gobrookon
Rylandeo
Clippe
Nokasima or Burning Isle
Mijarisima
Simanoura
Matsjamma
Tosa
Awadsi
Walasjama
Kinokisi
Kumano
Kiusiu
Kirune
Kamire
Sienosi
Tsikuzen
Buzen
Bungo
Nuga
Ximabara
Uto
Arima
Sira
Nagasaki
Amakusa
Osumi
Satsuma
Firando
Matsuura
Fakata
Simanaseki
Oki
Quelpart
Tsusima
Iwakosima
Koyzima
Dacasima
Chin-hai
Tsiencheon
Singtcheon
Long Koan
Kang
Saupou
Pinghai
Tsyclanl
Coast of Corea
Strait of Corea

JAPAN.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Names. — Extent. — Original Population. — Progressive Geography. — Historical Epochs and Antiquities.

THE kingdom, or, as it is by some styled, the empire of Japan, has by most geographers been classed among the Asiatic isles, and has in consequence been treated with more brevity than its importance demands. For, excepting China, no existing Asiatic monarchy can aspire to superior rank, or is more calculated to excite rational curiosity, from the singularity of its government, abundant population, progress in the arts of life, and peculiar manners of the people. The Japanese islands may in some measure be compared with Great Britain and Ireland, forming a grand insular power near the eastern extremity of Asia, like that of the British isles near the western extremity of Europe. Nor are ample modern materials wanting; for the honest and industrious Kæmpfer has given us a description which sometimes rivals the Britannia of Camden in minuteness and precision; and Thunberg, an able naturalist, has in his travels produced a supplement; so that few deficiencies remain in our knowledge of this interesting country.

NAMES.] Marco Polo, the father of modern Asiatic geography, mentions Japan by the name of Zipangri or Zipangu. The inhabitants themselves call it Nipon, or Nifon; and the Chinese Sippon, and Jepuen.

EXTENT.] This empire extends from the 30th to the 41st degree of N. latitude; and according to the most recent maps from the 131st to the 142d degree of E. longitude from Greenwich. Besides many smaller isles, it presents two considerable ones in the S. W., that of Kiusiu (also termed Saikokf or the western country); and that of Sikokf. But by far the most important island is that of Nipon, to the N. E. of the two former. The geography of Kæmpfer has been corrected by recent voyages, according to which the length of Kiusiu, from N. to S. is about two degrees, or 140 British miles: the greatest breadth about 90. Sikokf is about 90 British miles in length, by half the breadth. The grand isle of Nipon is in length from S. W. to N. E. not less than 750 British miles; but is so narrow in proportion, that the medial breadth cannot be assumed above 80, though in two projecting parts it

it may double that number. These islands are divided into provinces and districts, as usual in the most civilized countries.

To the N. of Nipon is another large isle, that of Jesso, or Chicha, which having received some Japanese colonies, is generally regarded as subject to Japan; but being inhabited by a savage people, is rather considered as a foreign conquest than as a part of this civilized empire.

ORIGINAL POPULATION.] The original population of Japan has been little illustrated; but the Japanese seem to be a kindred race with the Chinese: though, according to Kæmpfer, the languages are radically distinct. But if compared with that of Corea, the nearest land, and the latter with the Chinese, perhaps a gradation might be observable. The Japanese may have migrated from the continent, when both the Chinese and themselves were in the earlier stages of society; and the complete insular separation may have given rise to a language rendered peculiar by the progress of a distinct civilization.

PROGRESSIVE GEOGRAPHY.] Before the account published by Kæmpfer, Japan had been imperfectly explored by the Portuguese; and since 1730, the date of Kæmpfer's publication, many important improvements have been made, that author having failed in an exact delineation of the empire, which he chiefly derived from crude Japanese maps, and having erred so grossly as to confound the isle of Jesso with Kamschatka, from which, besides the great difference in longitude, it is distant about 6 degrees, or 360 geographical miles! These faults are not indicated to upbraid this industrious writer, who, like all others, must only be estimated by the state of knowledge when he wrote, but for the information of those who, unaware of the daily progress of geography, repose an undue confidence on antiquated authorities.

HISTORICAL EPOCHS.] The history of their own country is universally studied by the Japanese; and Kæmpfer has produced an elaborate abstract, divided into three epochs, the fabulous, the doubtful, and the certain.

The first extends beyond the judaic era of the creation, when the empire is fabled to have been governed by seven great celestial spirits successively; and the last having wedded a goddess, there succeeded a race of five demigods, one of which is said to have reigned 250,000 years, while the last reigned more than 800,000!

The second or uncertain epoch is by Kæmpfer interwoven with the Chinese history; this part of his work demonstrating that the Japanese themselves at least acknowledge their government and civilization to have been derived from China. Sin Noo, one of these Chinese monarchs admitted by the Japanese into their annals, is represented with the head of a bull, or with two horns, as having taught the use of agriculture and herds[1]; perhaps the simple and natural origin of the Jupiter Ammon, and similar images of classical antiquity.

The third or certain period begins with the hereditary succession of the ecclesiastic emperors, from the year 660 before the Christian era, to the year of Christ 1585, during which 107 princes of the same lineage governed Japan. At the last period the secular princes assumed the supreme authority. In general the reigns are pacific; though at very distant intervals the Mandshurs and Coreans occasionally invaded Japan, but were always defeated by the valour of the inhabitants. In the reign of Gouda, the ninetieth Dairi, or spiritual emperor, the Monguls under Mooko attempted a grand invasion of Japan, after having conquered China about fourteen years before.

[1] Kæmpfer, i. 231. French translation.

The number of small vessels is exaggerated to 4000, and that of the army to 240,000; and it is probable that numerous Chinese junks contained a formidable army of Monguls. But they were dispersed and almost wholly destroyed by a furious tempest, which the Japanese piously ascribed to the gods their protectors. In 1585 the generals of the crown, or secular emperors, who were also hereditary, assumed the supreme power: the Dairis being afterwards confined, and strictly guarded, that they might not reassume their ancient authority.

ANTIQUITIES.] The temples and palaces being constructed of wood, few monuments of antiquity can remain. Some of the castles of the nobility have walls of earth or stone; but the most ancient relics are probably the coins and idols.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Government. — Laws. — Population. — Colonies. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE established religion of Japan is a polytheism, joined with the acknowledgement of a supreme creator. There are two principal sects, that of Sinto and that of Budsdo. The first acknowledges a supreme being, far superior to the little claims and worship of man, whence they adore the inferior deities as mediators, the idea of a mediator being indispensable in almost every form of religion. They believe that the souls of the virtuous have a place assigned to them immediately under heaven, while those of the wicked wander in the air till they expiate their offences. The transmigration of souls is of course unknown. They abstain from animal food, detest bloodshed, and will not touch any dead body [1].

"Although the professors of this religion be pursuaded that their gods know all things, and that therefore it is unnecessary to pray to them upon any occasion, they have nevertheless both temples and certain stated holidays. Their gods are called *Sin* or *Kami*: and their temples are styled *Mia*. These temples consist of several different apartments and galleries, with windows and doors in front, which can be taken away and replaced at pleasure, according to the custom of the country. The floors are covered with straw mats, and the roofs project so far on every side as to overhang an elevated path, in which people walk round the temple. In these temples one meets with no visible idol, nor any image which is designed to represent the supreme invisible Being: though they sometimes keep a little image in a box, representing some inferior divinity, to whom the temple is consecrated. In the centre of the temple is frequently placed a large mirror, made of cast metal well polished, which is intended no remind those that come to worship, that in like manner as their personal blemishes are faithfully pourtrayed in the mirror, so do the secret blemishes and evil qualities of their hearts lie open and exposed to the all-searching eyes of the immortal gods [2]."

The priests are either secular or monastic; the latter alone being entrusted with the mysteries. The festivals and modes of worship are chearful, and even gay; for they regard the gods as beings who solely delight in dispensing happiness. Besides the first day of the year, and three or four other grand festivals, the first day of the month is always kept as a holiday. There are several orders of monks and nuns, as in the Roman Catholic system: but human nature is every where the same.

The sect of Budsdo was imported from Hindostan, being the same with that of Budha or Boodh, reported to have been born in Ceylon about 1000 years before the birth of Christ. Passing through China and Corea, it has been mingled with foreign maxims, but the tenet of the metempsychosis remains; wicked souls being supposed to migrate into the bodies of animals, till they have undergone a due purgation.

[1] Thunberg, iv. 19. [2] Id. iv. p. 21.

RELIGION.] The doctrine of their philosophers and moralists is called Shuto, and partakes of the Epicurean, though it acknowledges, with Confucius, that the purest source of pleasure is a virtuous life. This sect admits a soul of the world; but does not allow inferior gods, temples, nor religious forms. By a singular inconsistency the persecution of the Christians greatly diminished the number of the Epicureans; who, in order to avoid suspicion, are eager to return to the common religion of the country.

Soon after the discovery of this country by the Portuguese, Jesuitic missionaries arrived in 1549; and their successors continued to diffuse their doctrine till 1638, when 37,000 Christians were massacred. Several persecutions had formerly taken place; and in 1590 upwards of 20,000 are said to have perished. The pride and avarice of the Portuguese conspired with the vain ambition of the Jesuits, (who, not contented with their station, endeavoured to introduce themselves into the governing councils of the nation,) first to contaminate and render odious the religion which they professed, in its pure principles essentially opposite to such views, and afterwards to produce this melancholy catastrophe; the existence of the Christian faith being through such perversion found incompatible with that of a state otherwise universally tolerant. Since that memorable epoch Christianity has been held in supreme detestation; and the cross, with its other symbols, are annually trampled under foot; but it is a fable that the Dutch are constrained to join in this ceremony.

GOVERNMENT.] The Kubo, or secular emperor, is now sole monarch of the country; but till near the end of the seventeenth century the Dairis, pontiffs, or spiritual monarchs, held the supreme authority, being appointed by the high ecclesiastical court according to their laws of succession. Yet occasionally the appointment has been controverted; andJapan has been ravaged by many civil wars. The ecclesiastical dignities were of six orders, some belonging to particular offices, others merely honorary. The secular prince is accustomed to confer, with the consent of the Dairi, two honorary ranks, equivalent to our noblemen and knights. The ecclesiastical court is chiefly occupied with literary pursuits, the Dairi residing at Miaco and his court remains, though not in its former splendour.

The government of each province is intrusted to a resident prince, who is strictly responsible for his administration, his family remaining at the emperor's court as hostages; and he is himself obliged to make an annual appearance, the journey being performed with great pomp, and accompanied with valuable presents. The emperor, as in the feudal times of Europe, derives his chief revenue from his own estate, consisting of five inferior provinces, and some detached towns. Each prince enjoys the revenues of his fief or government, with which he supports his court and military force, repairs the roads, and defrays every civil expence. The princes of the first dignity are styled Daimio, those of inferior rank Siomio. They are generally hereditary, but the Siomios are not only obliged to leave their families at Jedo the capital, but to reside there themselves for six months in the year.

There do not seem to be any traces of a national council, or even assembly of nobles, which seems indeed foreign to the Asiatic manners, though it may be traced in ancient Persia. The cause of this defect has not been investigated, though it necessarily springs from a despotic form of government, universal in the civilized countries of Asia; where the ebullition of the passions seems too strong for cool debate or senatorial eloquence, and difference of opinion would inflame into mutual slaughter. The singular constitution of Japan therefore consists of an absolute hereditary monarchy, supported by a number of absolute hereditary princes; whose jealousy of each other's power conspires, with domestic pledges, to render them subservient to one supreme.

Laws.] The superiority of the laws of Japan over those of Europe has been loudly proclamed by Kæmpfer. The parties themselves appear, and the cause is determined without delay. Yet Kæmpfer's information on this head is defective, as he does not mention any code of laws, and chiefly dwells on the advantages arising from the exclusion of strangers from the kingdom, it being also death for any Japanese to leave his country. Thunberg informs us that the laws are few, but rigidly enforced without regard to persons, partiality or violence [3]. Most crimes are punished with death, fines being considered as partiality to the rich; but the sentence of death must be signed by the privy council at Jedo. Parents and relations are made answerable for the crimes of those whose moral education they ought to have superintended. The police is excellent, there not only being a chief magistrate of each town called Nimban, but an Ottono or commissary of each street, elected by the inhabitants to watch over property and tranquillity. Two inhabitants in their turn nightly patrole the street to guard against fire.

The best proof that their laws are salutary is that few crimes are committed, and few punishments are inflicted. The brief code, according to Thunberg, is posted up in every town and village, in large letters on a spot surrounded with rails [4].

Population.] The population of the Japanese empire, like that of other Asiatic states, cannot be treated with much precision. Ancient and modern travellers seem to have passed this subject in silence. Perhaps the Japanese have some prejudice against any enumeration, or chuse from political views to bury it in obscurity; while the Chinese, with like design, may perhaps magnify the population of their country. All travellers however agree that the population is surprising, and though a great part of the country is mountainous, yet even the mountains are the objects of obstinate cultivation. Thunberg observes that the capital, Jedo, is said to be 63 British miles in circumference, and at any rate rivals Pekin in size [5]. Many of the villages are three quarters of a mile in length and some so long that it requires several hours to walk through them: and these large villages frequently occur at very short distances. Kæmpfer says that the number of people daily travelling on the highways is inconceivable, and the *tokaido* the chief of the seven great roads, is sometimes more crowded than the most frequented streets of European capitals [6]. In another passage he expressees his amazement at the extraordinary population, the highways passing through almost continuous villages, while the capitals, Jedo and Miaco, equal in size any cities in the world. Varenius the geographer, who justly esteemed this country so interesting as to deserve a particular description, has from the best authorities estimated the standing army maintained by the princes and governors at 368,000 infantry, and 38,000 cavalry: while the Kubo, or emperor, maintains 100,000 foot, and 20,000 horse; thus constituting in all a regular force of 468,000 infantry, and 58,000 cavalry [7]. It is probable that this army does not bear a greater proportion to the population, than that of an European state in time of peace; and as the army doubles that of France under the monarchy, so the population may also be double. Perhaps a more safe estimate may be formed, by supposing the population of Japan to equal that of China; and the former country being about one-tenth part the size of the latter, the population will be about 30,000,000.

Colonies.] Though the national laws prohibit emigration, yet where the Japanese make conquests, they seem to regard the country as their own, and to form settlements without hesitation. Hence Japanese colonies may be found in Jesso, and other adjacent isles: nay even in isles of the Indian Archipelago, so that their laws as in China, seems rather theoretic.

[3] Thunberg, iv. 64. [4] iv. 72. [5] iii. 282. [6] ii. 345. and iii. 318. [7] Defer. Jap. Cap. ix.

ARMY, &c.] The army has been already mentioned as amounting to more than half a million; and the character of the people is singularly brave and resolute. The navy, like that of the other oriental powers, is beneath notice. The Japanese vessels are open at the stern, so that they cannot bear a boisterous sea; and though, like the Chinese, they have the use of the compass, yet it is inconceivable how they could, in former times, make voyages, as is asserted, to Formosa, and even to Java.

REVENUES.] The revenues of this empire are minutely stated by Varenius, according to princes and provinces, the sum total being 2834 tons of gold, in the Flemish mode of computation; and taking the ton at only 10,000l. sterling, the amount would be 28,340,000l. sterling, besides the provinces and cities which are immediately subject to the emperor. These revenues must not however be considered as national, being only yielded in coin to the various princes. The emperor however, besides the large revenues of his provinces, has a considerable treasure in gold and silver, disposed in chests of 1000 taels, or thayls, each being nearly equal in value to a Dutch rix dollar, or about four shillings and fourpence English money. As the frenzy of mankind generally expends the public revenue in the support of an army, the real weight of the Japanese resources may best be estimated from the numerous army supported*.

POLITICAL IMPORTANCE AND RELATIONS.] Japan maintains no political relations with any other state; and consisting of islands without a navy, its external political importance is of course confined, if not annihilated. No danger is to be apprehended except from Russia; and it seems doubtful whether, even supposing the Russians capable of conducting a sufficient force through the wilds of Siberia, European weapons and tactics would prevail against prodigious numbers, and determined valour. To Russia indeed the conquest might be important as securing numerous havens, and a consequent powerful fleet in the rear of her Asiatic possessions; but the unavoidable interference of China, justly apprehensive of the consequence, would prove an invincible obstacle; nor is it likely that the kingdom and laws of Japan will be overturned; or her vast population wafted to various regions of the globe in subservience to Russian ambition.

* Thunberg, iv. 8. computes the revenue of the crown lands at more than forty-four thousands of millions of sacks of rice, each sack being about twenty pounds weight. But this calculation implies nothing to an European reader.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners and Customs.—Language.—Literature.—Education.—Cities and Towns.—Edifices.—Roads.—Inland Navigation.—Manufactures and Commerce.

A RECENT traveller has described the persons of this singular people in the following terms[1]. "The people of this nation are well made, active, free, and easy in their motions, with stout limbs, although their strength is not to be compared to that of the northern inhabitants of Europe. The men are of the middling size, and in general not very corpulent; yet I have seen some that were sufficiently fat. They are of a yellowish colour all over, sometimes bordering on brown, and sometimes on white. The lower class of people, who, in summer when at work, lay bare the upper part of their bodies, are sun burnt, and consequently brown. Ladies of distinction, who seldom go out in the open air without being covered, are perfectly white. It is by their eyes that, like the Chinese, these people are distinguishable. These organs have not that rotundity which those of other nations exhibit; but are oblong, small, and are sunk deeper in the head, in consequence of which these people have almost the appearance of being pink-eyed. In other respects their eyes are dark brown, or rather black; and the eye lids form in the great angle of the eye a deep furrow, which makes the Japanese look as if they were sharp sighted, and discriminates them from other nations. The eye-brows are also placed somewhat higher. Their heads are in general large, and their necks short; their hair black, thick, and shining, from the use they make of oils. Their noses, though not flat, are yet rather thick and short."

MANNERS AND CUSTOMS.] This highly civilized people must of course display great diversity of character, but the virtues far preponderate over the vices; and even their pride is useful, as it prevents them from stooping to the mean tricks of the maritime Chinese. Though polygamy be allowed, yet one wife only is acknowledged, the others being merely concubines. Marriages are conducted by the parents, or relations; and domestic tranquillity is insured by the wife's being under the absolute disposal of her husband, the laws allowing no claim whatever in case she incur his displeasure[2]. Hence, though the women be not confined, examples of infidelity are very rare. In case of separation the wife is condemned to the ignominy of having her head always shaven. The marriage ceremony is performed before an altar, by the bride's lighting a torch from which the bridegroom kindles another.

The bodies of the distinguished dead continue to be burned, while others are buried. Periodical visits are paid to the tombs, besides the festival of lantherns held as in China in honour of the departed.

The Japanese use great varieties of food and sauces. The master or mistress of the house is not harassed with the trouble of carving, the meat being previously cut into

[1] Thunberg, iii. 251. [2] Varenius, 39.

small pieces, served up in basons of porcelain, or japanned wood. The general drink is sacki, or beer made of rice; which last article also supplies the place of bread. They use many kinds of vegetables and fruits. The use of tea is also universal; but wine and spirituous liquors are unknown. The use of tobacco seems to have been introduced by the Portuguese; and the practice of smoking has become general.

The houses of the Japanese are of wood, coloured white, so as to resemble stone; and though roomy and commodious never exceed two stories in height, the upper serving for lofts and garrets, and seldom being occupied [3]. Each house forms but one room, which may be divided into apartments at pleasure, by moveable partitions sliding in grooves. They use neither chairs nor tables, sitting on straw mats, the meal being served apart to each on a small square wooden salver. In Jedo the houses are covered with tiles; but the general fabric is a frame work of wood, split bamboos, and clay,

The dress consists of trowsers; and what we call night-gowns, or loose robes of silk or cotton, are universally worn by both sexes [4]. These are fastened by a girdle; the number being increased according to the coldness of the weather; and in cases of sudden warmth thrown from the shoulders and remain suspended by the girdle. Stockings are not used; and the shoes are commonly of rice straw. The men shave the head from the forehead to the nape, but the hair on the sides is turned up and fastened at the crown of the head: conical hats made of grass are worn on journies, but the fashion of wearing the hair forms the common economical covering of the head; and seems calculated, like the heavy head dress of the ancient Egyptians, to resist the force of too potent a sun.

The Japanese festivals, the games, and theatrical amusements, equal those of most civilized nations. Dancing girls are common, as in other oriental countries; and the introduction of boys indicates an abominable propensity here, as in China, neither reputed a crime nor a singularity.

LANGUAGE.] Thunberg has published a curious vocabulary of the Japanese language, which seems indeed to have little connection with the monosyllabic speech of the Chinese. There are also dictionaries drawn up by the Jesuits.

LITERATURE.] In the sciences and literature the Japanese yield to few of the oriental nations. This sensible people studies housekeeping, or domestic economy, as an indispensable science; and next to this every Japanese is versed in the history of his country [5]. Astronomy is cultivated, but has not arrived at much perfection. They survey with tolerable accuracy; and their maps are as exact as their imperfect instruments will permit. The art of printing is ancient, but they use blocks, not moveable types, and only impress one side of the paper. Some of their arts and manufactures even surpass those of Europe. There are excellent workmen in iron and copper; and to no eastern country do they yield in manufactures of silk and cotton; while in varnishing wood they are well known to have no equals. Glass is also common; and they even form telescopes. The porcelain is deemed superior to that of China. Their swords display incomparable skill; and many varieties of paper are prepared from the bark of a species of mulberry tree. The celebrated varnish is from the *rhus vernix*.

EDUCATION.] There are many schools in which the children are taught to read and write; their education being accomplished without the degradation of personal chastisement, while courage is instilled by the repetition of songs in praise of deceased heroes.

CITIES AND TOWNS.] The capital city of the Japanese empire is Jedo, centrically situated on a bay in the S. E. side of the chief island Nipon. The houses never exceed

[3] Thunberg, iii. 112. [4] Ib. 267. [5] Ib. iv. 54.

two

two stories, with numerous shops towards the streets. The harbour is so shallow that an European ship would be obliged to anchor at the distance of five leagues. A fire happened in this city in the year 1772, which is said to have consumed six leagues in length and three in breadth; and earthquakes are here familiar as in other regions of Japan. The emperor's palace is surrounded with stone walls, and ditches with draw-bridges; forming of itself a considerable town, said to be five leagues in circumference [6]. In this, and similar instances of oriental population and extent, though the best authorities are followed, yet the reader may, with the author, suspend his belief. The Japanese affirm that Jedo would occupy a person twenty-one hours to walk around its circumference, which might thus amount to about twenty-one leagues: and that it is seven leagues in length by five in breadth. A large river, not named by Kæmpfer, passes through the capital, and besides the wide ditches of the palace, supplies several canals. There are no walls nor fortifications, which are unknown in Japanese cities; but there are many splendid houses of the numerous princes. As Europeans are much restricted, the accounts given by Kæmpfer and Thunberg are little satisfactory.

Miaco, the spiritual capital, and second city of the empire, is placed in an inland situation about 160 miles S. W. from Jedo, on a level plain. Yet it is the first commercial city, and is celebrated for the principal manufactures. It is also the seat of the imperial mint: and the Dairi's court being literary, all books are printed here. Kæmpfer informs us that, upon an enumeration taken in 1674, the inhabitants were found to amount to 405,642; of whom were males 182,070; and 223,572 females; without including the numerous attendants of the Dairi. But they are divided according to sex; and the children probably excluded.

Nagasaki being the nearest city to the Dutch factory in the isle of Dezima, has of course attracted the particular attention of our travellers. The harbour is the only one in which foreign ships are permitted to anchor, a privilege now enjoyed only by the Dutch and Chinese. The Portuguese trade raised this place, from a mere village, to its present size and consequence.

The other cities in the Japanese empire may amount to thirty or forty; but, except those on the route from Nagasaki to the capital, few have been explored by European travellers. Osacca, and Sakai, boast the name of imperial cities.

Edifices.] Of the principal edifices of the Japanese some idea may be formed from the descriptions which our travellers give of the imperial palace, which, like those of the Chinese, consists of many dwellings, occupying an immense space. The saloon of the hundred mats is 600 feet in length by 300 in breadth. There is a high square tower, (a mark of dignity not permitted here to the grandees, though usual at their own courts,) which consists of several stages richly decorated; and most of the roofs are ornamented with golden dragons. The pillars and ceilings are of cedar, camphor, and other precious woods; but the only furniture consists of white mats, fringed with gold. The emperor gives audience in a smaller chamber, where he is seated on carpets.

Roads, &c.] The roads seem to be maintained in excellent order; but the mountainous nature of the country has prevented the formation of canals, which indeed the universal proximity of the sea renders almost unnecessary; otherwise so sensible and industrious a nation would doubtless have imitated the Chinese example.

Manufactures and Commerce.] The chief manufactures of Japan have been already mentioned in the account of arts and sciences. The inland commerce is very

[6] Thunberg, iii. 189.

consi-

considerable, being free and exempted from imposts[8]. The harbours are crowded with large and small vessels; the high roads with various goods; and the shops well replenished. Large fairs are also held in different places, to which there is a great concourse of people. The trade with China is the most important, consisting of raw silk, sugar, turpentine, drugs, &c. while the exports are copper in bars, lackered ware, &c. Thunberg represents the profits of the Dutch trade as very inconsiderable, so that the Company only employed two ships. The Japanese coins are of a remarkable form, the gold being called Kobangs. The silver, called Kodama, sometimes represents Daikok, the god of riches, sitting upon two barrels of rice, with a hammer in his right hand, and a sack at his left. The Seni, of copper or iron, are strung like the Chinese pieces of a similar value.

[8] Thunberg, iv. 106.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons. — Face of the Country. — Soil and Agriculture — Rivers. — Lakes. — Mountains. — Volcanoes. — Forests. — Botany. — Zoology. — Mineralogy. — Isles.

CLIMATE AND SEASONS.] THE heat of summer is in Japan extremely violent, and would even be insupportable, were not the air cooled by the sea breezes. Equally severe is the cold in winter, when the wind blows from the north, or north-east, and seems to be impregnated with particles of ice from the Arctic ocean. The weather is changeable throughout the year; and there are abundant falls of rain, especially in the satsaki, or rainy months, which begin at Mid-summer [1]. This copious moisture is the chief cause of the fertility of Japan, and its consequent high degree of population.

Thunder is not unfrequent; and tempests, hurricanes, and earthquakes are very common. Thunberg has published his thermometrical observations, from which a clear idea may be formed of the climate. The greatest degree of heat at Nagasaki, was 98° in the month of August; and the severest cold in January 35°. The thunder in the summer months is generally during the night; and the snow will remain on the ground some days even in the south.

FACE OF THE COUNTRY.] Though there be plains of considerable extent, as appears from the description of Miaco, yet Thunberg assures us that the whole country consists of mountains, hills, and valleys, the coast being mostly rocky and precipitous, and invested with a turbulent sea. The face of the country is also diversified with many rivers, and rivulets, by numerous singular tribes of vegetation; and generally excites the social ideas of industry, more calculated perhaps to delight the heart than the wild appearances of deserted nature. The soil in itself may be said to be rather barren; but the prolific showers conspire with labour and manure to overcome even this obstacle. Thunberg [2] has presented us with some curious details concerning Japanese agriculture, a science in the highest estimation with this sensible people, so that except the most barren, and untractable mountains, the earth is universally cultivated; and even most of the mountains and hills. Free from all feudal and ecclesiastical impediments, and highly respected by the other social classes, the farmer cultivates the soil with freedom and industry. There are no commons; and if any portion be left uncultivated it may be seized by a more industrious neighbour. But when Thunberg praises the want of meadows, he seems to err against European rules, which consider cattle as necessary for manure. The Japanese mode is to form a mixture of excrements of all kinds, with kitchen refuse, which is carried in pails into the field, and poured with a ladle upon the plants, when they have attained the height of about six inches, so that they instantly receive the whole benefit. The weeding is also carried to the utmost degree of nicety.

[1] Thunberg, iii. 234. [2] iv. 80.

The

The sides of the hills are cultivated by means of stone walls, supporting level plats sown with rice or esculent roots [3]. "Thousands of these beds adorn most of their mountains, and give them an appearance which excites the greatest astonishment in the breasts of the spectators." When we consider that the climate of Japan is exposed to heavy rains, we are the more led to blame the want of industry in the Highlands of Scotland, and some other mountainous districts of Europe. Rice is the chief grain; buck wheat, rye, barley, and wheat being little used. A kind of potatoe * is abundant; with several sorts of beans and peas, turnips, and cabbages, &c. The rice is sown in April, and gathered in November: in which last month wheat is sown, and reaped in June. The barley also stands the winter. From the seed of a kind of cabbage lamp oil is expressed; and several plants are cultivated for dyeing; with the cotton shrubs, and mulberry trees, which last feed abundance of silk worms. The varnish and camphor trees, the vine, the cedar, the tea-tree, and the bamboo reed, not only grow wild, but are planted for numerous uses.

Rivers.] The rivers of Nipon have not been delineated with much care. Among the few named are the Nogafa, and, the Jedogawa, which passes by Osaka, where it is crowned with several bridges of cedar, from 300 to 360 feet in length. The river Ojingawa † is one of the largest and most dangerous in the country, though not subject, like the others, to swell during rains. Fusigawa is also a large and rapid river; as is that called Sakgawa. The largest river seems to be the Jodo, or perhaps in the German pronunciation Yodo, which flows S. W. from the central lake of Oitz; but our geography of the Japanese empire is far from being complete. Among the most important rivers Kæmpfer names the Ujin (the Ojin of Thunberg); the Oomi reported by the Japanese history to have burst from the ground in one night; and the Aska[4].

Lakes.] One of the chief lakes seems to be that of Oitz, which emits two rivers, one towards Miaco, the other towards Osaka; and it is said to be 50 Japanese leagues in length, each about an hour's journey on horseback: but the breadth is inconsiderable.

Mountains.] The principal Japanese mountain is that of Fusi, covered with snow almost throughout the year. The Fakonie mountains are in the same quarter, surrounding a small lake of the same name[5]. Many of the mountains are overgrown with wood; and others cultivated as before explained. There are several volcanoes; and in general they abound with evergreen trees and crystalline springs.

Volcanoes.] Near Firando there is a volcanic island, nor are others unknown in the surrounding seas[6]. In the province of Figo there is a volcano which constantly emits flames; and another, formerly a coal mine, in the province of Tsikuser. The course and extent of the various ranges of mountains have not been indicated.

Near the lake of Oitz is the delightful mountain of Jesan; which is esteemed sacred, and is said to present not less than 3000 temples[7].

Forests.] In the high state of cultivation few forests can appear; except those already mentioned as decorating the sides of mountains.

Botany.] The vegetable treasures of Japan are numerous, and have been ably explored by Kæmpfer‡ and Thunberg§: on account however of the enormous popu-

[3] Thunberg, iv. 80.

* It is the Batatas (convolvulus edulis) in the time of Queen Elizabeth imported from Spain to England; and often confounded with the potatoe, (solanum tuberosum) which is rare in Japan.

† The word *Gawa*, or *Gava*, seems to imply a river, in which case the repetition is absurd, though often used in the geography of countries little known.

[4] Thunberg, i. 163. [5] Ib. iii. 164. [6] Kæmpfer, i. 166.
[7] Kæmpfer, iii. 28. ‡ Amænitates exoticæ. § Flora Japonica.

lation of the country, and the absolute necessity of paying the utmost attention to the introduction of whatever may contribute to human sustenance, it is not easy to ascertain how far several of the esculent plants cultivated here are truly indigenous. There are many points of resemblance between the floras of China and Japan, and this similarity has probably been strengthened by a mutual interchange of useful vegetables; if indeed both countries have not rather derived some of their most valuable plants from Cochin-China, or the Philippine islands: the ginger, the soy bean, black pepper, sugar, cotton, and indigo, though perhaps natives of the more southern regions of Asia, are cultivated here with great success and in vast abundance. The Indian laurel and the camphor tree are found in the high central parts of Japan, as is also the rhus vernix, from the bark of which exudes a gum resin that is supposed to be the basis of the exquisitely beautiful and inimitable black varnish, with which the inlaid cabinets and other articles of Indian luxury are covered. Besides the common sweet, or China orange, another species, the citrus japonica, is found wild, and almost peculiar to this country: two kinds of mulberry are met with both in an indigenous and cultivated state, the one valuable, as the favourite food of the silk worm, the other esteemed for the white fibres of its inner bark, which are manufactured into paper. The larch, the cyprus, and weeping willow, found in all the warm regions between Japan and the Mediterranean, here arrive at the extremity of their boundary to the east: the same may be said of the opium poppy, white lily, and jalap (mirabilis jalapa). Among the species peculiar to Japan may be mentioned aletris japonica, a stately bulbous rooted plant, camellia japonica, and volkameria japonica. The trumpet-flower (bignonia catalpa) is common to this part of Asia and Peru; in which circumstance it resembles the epidendrum vanilla, whose berries form an article of commerce, being largely used in the preparation of chocolate. The mimosa arborea, and tallow tree, the plantain, the cocoa nut tree, and two other palms, the chamærops excelsa and cycas circinalis, adorn the woodland tracts, especially near the sea shore, by the variety of their growth and foliage, while the uncultivated swamps by the sides of the rivers are rendered subservient to the uses of the inhabitants by the profusion and magnitude of the bamboos, with which they are covered.

Zoology.] It is not a little remarkable that neither sheep nor goats are found in the whole empire of Japan; the latter being deemed mischievous to cultivation; while the abundance of cotton and silk recompence the want of wool. Swine are also deemed pernicious to agriculture; and only a few appear in the neighbourhood of Nagasaki, probably introduced by the Chinese[8]. There are in general but few quadrupeds; the number of horses in the empire being computed by Thunberg as equal to those of a single Swedish town. Still fewer cattle are seen; and the Japanese neither use their flesh nor their milk, but employ them only in ploughing, or drawing carts. The food consists almost entirely of fish and fowl, with vegetables. Hens and common ducks are domesticated, chiefly on account of their eggs. A few dogs are kept from motives of superstition; and the cats are favourites of the ladies.

The wolf appears in the northern provinces, and foxes in other parts; these last being universally detested, and considered as demons incarnate. The curious reader will find a tolerably ample account in Thunberg's work of the natural history of this singular country; from which shall be extracted the following idea of its mineralogy.

Mineralogy.] "That the precious metals, gold and silver, are to be found in abundance in the empire of Japan has been well known, both to the Portuguese, who formerly exported whole ship loads of them, and to the Dutch in former times. Gold is found in several parts; and perhaps Japan may in this respect contest the palm with

[8] Thunberg, iv. 95.

the richest country in the world: but in order that this metal may not lose its value, by becoming too plentiful, it is prohibited to dig more than a certain stated quantity; not to mention that no metallic mine, of any kind whatever, can be opened and wrought without the emperor's express permission. When this permission is obtained two thirds of the produce are the portion of the emperor, and the proprietor of the land receives one third for his expences. Gold is found in small quantities in the sand; but the chief part is extracted from cupreous pyrites, dissolved by brimstone. The finest gold, together with the richest gold mine, I was told, are found on the largest of the Nipon islands near Sado. The next in quality to this is that which is found in Surunga. Besides these places, it is known for a certainty that several rich gold mines are to be found in Satsuma; as likewise in Tsikungo; and in the island of Amakusa. It is used for the mint, gilding, and embroidery; but is not carried out of the country.

"Silver must formerly have been found in much greater plenty than at present, as a large quantity of it was then exported from this country. The Japanese consider it as being more rare than gold, although the latter metal is dearer. They now likewise received in barter a considerable sum of Dutch ducatoons from the Dutch company. It is said to be found in the province of Bingo; and in the more northerly parts towards Kattami, as I was informed, very rich silver mines are to be met with. Independently of these places the two islands which are called the Gold and Silver Isles, (*Ginsima*, *Kinsima*,) are said to contain a great quantity of both of these precious metals. Silver is used for coining and for plating.

"Copper is quite common in every part of the empire, and is richly impregnated with gold, constituting the main source of the wealth of many provinces. It was not only formerly exported in amazing quantities, but still continues to be exported both by the Dutch and Chinese merchants. The finest and most malleable is dug in Suruga, Atsingo, Knyo, Kuni. The last sort is esteemed to be the most malleable of any; whilst that from Suruga contains the greatest quantity of gold. A great number of copper mines are to be found in Satsuma, and at other places. Of this metal are made small pieces of money for change; it is used likewise for plating, for making utensils of Sowas, for pots, kettles, &c.

"Iron seems to be scarcer than any other metal in this country. It is found however in the provinces of Mimasaka, Bitsju, and Bisen. This they are neither fond of importing, nor yet of exporting it for sale. Of it they manufacture scymitars, arms, scissars, knives, and various other implements of which they stand in need.

"Of amber I had a present made me by my friends: they call it nambu. It was of a dark, as well as of a light yellow colour, and likewise streaky. I was told also that it is found in this country.

"Brimstone is found in great abundance in Japan, especially upon a certain island near Satsuma. Pit-coal, I was informed, is likewise to be met with in the northern provinces. Red agate with white veins I saw several times made use of for the buttons, &c. of tobacco pouches, and medicine chests; which agate was most frequently cut in the shape of a butterfly, or some other animal[9]."

It may be added from Kæmpfer that brass is very rare, the calamine being brought from Tunquin; and beautiful tin is found in the province of Bungo, though perhaps this may be the white copper of the Chinese. Amber grease is now discharged from the list of mineral productions; but a reddish naphtha is sometimes found, and used in lamps. Neither antimony nor quicksilver have been discovered in Japan.

Thunberg also enumerates asbestos, porcelain clay, beautiful flesh-coloured steatite, pumice, and white marble[10].

[9] Thunberg, iv. 102. [10] Ib. iii. 203.

There are several warm mineral waters, which the inhabitants use for various diseases; particularly those of Obamma, and those in the mountain of Omfen[n]. The natural curiosities of Japan have been little investigated, as Europeans have seldom visited the interior of the country.

Isles.] There are many small isles dependent on Japan, particularly in the S. and E.; among which is Fatfisio, the place of exile for the grandees. This, and the other little isles, are scarcely known except by name.

[n] Kæmpfer, i. 167.

THE BIRMAN EMPIRE;

COMPRIZING THE KINGDOMS OF AVA AND PEGU.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Name. — Extent. — Boundaries. — Original Inhabitants. — Progressive Geography. — Modern History.

NAME.] BEFORE the appearance of a recent interesting publication[1] little was known concerning this new empire; and geographers were constrained to detail the old accounts, which are little satisfactory. The Birman empire derives its name from the Birmahs, who have been long known as a warlike nation in the region formerly styled INDIA BEYOND THE GANGES; the capital city of their kingdom being Ava or Awa. Pegu is by the natives styled Bagoo[2]; being the country situated to the south of the former, and justly inferred to have been the golden Chersonese of the ancients.

EXTENT AND BOUNDARIES.] It is difficult to ascertain with precision the boundaries of the Birman empire. Mr. Symes informs us that "it appears to include the space between the 9th and 26th degrees of north latitude; and between the 92d and 107th degrees of longitude east of Greenwich; about 1050 geographical miles in length and 600 in breadth: these are the ascertainable limits, taken from the Birman accounts; but it is probable that their dominions stretch still further to the north. It should however be remarked that the breadth often varies; and is in many places very inconsiderable on what is called the eastern Peninsula[3]."

The geography of what is called India beyond the Ganges, a vague name for the wide and various regions between Hindostan and China, is still defective. To the north the Birman empire is divided by mountains from Asam, a country little visited or known; and further to the east it borders on Tibet and China. On the west a range of mountains and the little river Naaf, divide the Birman possessions from the British dominions in Bengal; and the limit is continued by the sea. But the southern and eastern boundaries remains rather obscure. If extended to the 9th degree of latitude it will include a considerable portion of the grand Malaian peninsula to the vicinity of Bangri, or in other words the province of Tanaserim and city of Merghi, formerly re-

[1] Symes's Account of the embassy to Ava. [2] Ib. i. 6. 8vo. edit. [3] Ib. ii. 411.

garded

garded as part of Siam. The eastern boundary is yet more vague: if extended to the 107th degree of longitude, it might be said to include almost the whole of what is called India beyond the Ganges, as far as the mouths of the Japanese river in Cambodia; yet there seems no express evidence that Siam is regarded as a portion of the Birman empire; and if it were it would only extend to 103 degrees. Amidst this uncertainty it must suffice to observe that the Birman empire constitutes the fifth grand native power in Asia, since Hindostan and Persia have been divided, and may probably extend its authority over Laos and Cambodia, while it remains divided, by deserts and ranges of lofty mountains, from the united kingdoms of Cochin-China and Tunquin.

ORIGINAL POPULATION.] The original population of this region has been little illustrated. The alphabet, literature, and religion, are derived from those of the Hindoos; but the language, the grand criterion of national origins, has not been regularly collated with those of the adjacent countries*.

PROGRESSIVE GEOGRAPHY.] The progressive geography of this territory becomes not a little interesting, as it has lately been shown by M. Gossellin to constitute the utmost boundary of ancient knowledge in this quarter of the globe‡. He observes that what chiefly characterizes the Golden Chersonese of Ptolemy is the mouth of a large river, which there divides itself into three branches before it joins the sea. These channels appeared so considerable that each of them bore the name of a river, the Chrysoana, the Palandas, and the Attabas. It must be remarked that Ptolemy gives no name to this river above its division; and that he does not indicate its source as he does that of the others. It also appears that he knew nothing of the interior of this country, since he does not determine the position of any place. It was inhabited by a nation of robbers, whence the passage through it was shunned, and the Indians, whom commerce led to the country of the Sinæ, followed a route to the north of this region. The other arguments of M. Gossellin, being founded on minute circumstances, shall be passed in silence; but upon comparing Ptolemy's map with that of the country, there seems no manner of doubt that the Golden Chersonese is the southern part of the kingdom of Pegu, which may be considered as insulated by rivers. In the southern part of the Malaian peninsula, which has hitherto been regarded as the Golden Chersonese, the river Johr is so small a stream, that it could never have supplied the three important mouths noted by Ptolemy; and his delineation of the country of the Sinæ, stretching along a *western* sea, palpably corresponds with Tanaserim, while D'Anville's map so much contradicts that of Ptolemy, as to place the sea on the *east* of the Sinæ, and proceeding to the *northward*, instead of the *southward*. In short there is no doubt that though our ingenious French geographer in a subsequent work too much limited the ancient knowledge of Africa†, yet in describing its Asiatic limits his proofs almost amount to mathematical demonstration. Additional advantages might indeed have been derived from that truly eminent geographer Mr. Dalrymple's map of India beyond the Ganges, of which a sketch is published in Colonel Symes's work, and from the additional labours of Mr. Arrowsmith, which give a different aspect to the rivers in this quarter, from what they bore in maps in 1790, when Gossellin published his Analysis of Greek Geography. As the river Berhampoota was totally unknown to Ptolemy, his ignorance of the northern part of Bengal may easily be conceived by the omision of that important and striking feature. The rivers he lays down between the mouths of the Ganges, and the Delta of the Golden Chersonese, amount to five; of which three appear in our maps, but we are ignorant of the southern part of Aracan, which probably contains the

* See vol. vi. of the Asiatic Researches.

‡ Geograph. des Grecs Analys. 139.

† Recherches sur la Geographie des Anciens, 2 vols. 4to. The volumes relative to the ancient knowledge of Europe, if they have appeared, have not yet reached England.

two

two others. The three chief mouths of the Irrawaddy, in Mr. Dalrymple's map, faithfully correspond, even in the form and manner of division, with those in the Golden Chersonese of Ptolemy; and the bay to the south of Dalla seems the Perimulicus Sinus of the Greek geographer, the small river to the east of which is that of Sirian, or Pegu. It will follow that the large river Daona is that of Sitang: and the other six rivers, great and small, might be equally indicated down to the Coteiris of Ptolemy, that of Tanaserim in modern maps, which flowed to the south of the Sinæ. It is also evident that the ancient geographer knew nothing of the straits of Malacca, nor of the northern part of the great island of Sumatra; which must both have been well known, if the Malaian peninsula had been the Golden Chersonese of the ancients.

The isle of Iabadium M. Gossellin supposes to be that called Dommel in modern maps; but by D'Anville, in the Portuguese form, *Ilha do Mel*.

A curious question remains, whether the people to the south of Martaban, along the shore towards Merghi, be noted in Hindoo tradition for such advantages as distinguished the Sinæ of antiquity; while the city of Tanaserim (a word which means the tribe of Tana) corresponded with Thinæ. The violence of oriental revolutions will speedily ruin even the remains of former opulence, as is exemplified in the present state of Pegu; but as even when D'Anville published his map of Asia this country was called Lower Siam, it must have partaken in the advantages of that ancient and civilized kingdom, the inhabitants of which are justly concluded to have been the Sinæ of antiquity.

After this long discussion it may seem unnecessary to dwell on any faint and dubious hints to be found in Marco Polo, and other writers of the middle ages. The first precise ideas concerning this part of the globe were derived from the discoveries of the Portuguese, but the geography remains so imperfect that even D'Anville has erred in the delineation; and Mr. Symes's work leaves room for many illustrations and improvements, when future travellers shall investigate with care the countries beyond the Ganges *.

Modern History.] The history of the Birman empire is detailed at some length in the introductory part of the recent publication; and as it displays the origin of a new and great Asiatic power it may be interesting to present an abstract. Colonel Symes justly observes that little was known concerning these countries, till the Portuguese made themselves masters of Malacca early in the sixteenth century, and were afterwards succeeded by the Dutch, who became masters of the whole peninsula, and had a factory even at Ligor, which properly belonged to Siam. The Portuguese historians are prone to exaggeration, and their accounts have little claim to precision, while the Dutch are commonly dull and unscientific. From such sources however flowed the first knowledge of these countries, of Aracan, extending southward to cape Negrais, and of Ava, the ancient capital of the Birmans, while their country at large is called Miama, being divided from the former by a ridge of lofty mountains, called Anoupectou-miou, or the great western hilly country. Pegu, or Bagoo extended as far as Martaban, the city of Prome being its northern limit; while Siam adjoined on the east, extending south to Junkseilon a considerable isle, the Siamese calling themselves Tai, while their capital was Yoodia †. From the Portuguese accounts it appears that the Birmans, a brave and warlike race, formerly subject to the king of Pegu, became afterwards masters of Ava, and caused a revolution in the former country about the middle of the sixteenth century, when they took Martaban, a subject of the extravagant

* The French intercourse with Siam, towards the end of the seventeenth century, occasioned many descriptions of that kingdom; but the accounts of Ava and Pegu are rare. There is one of Tunquin and Laos, translated from the Italian of Marini, Paris, 1661, 4to.

† Also called Siam. As the *j* is in many countries pronounced *y*, (the real Oriental form) this name became the Juthea of travellers.

fables

fables of the notorious Mendez de Pinto, the sovereign of hyperbolic voyagers. The Portuguese continued to influence these countries till they were expelled by the Dutch, who obtained settlements in various parts of the Birman territory; while the English had factories at Sirian, and even at Ava.

The Birmans continued to exercise their supremacy over Pegu till about the year 1740, when a civil war arose, during which the British factory at Sirian was destroyed in 1744, By some European aids the Peguese, in 1750 and 1751, gained several victories over the Birmans; and in 1752 Ava was besieged and taken; the last of a long line of Birman kings being reduced to captivity, but two of his sons escaped to Siam.

When Binga Della, king of Pegu, had completed the conquest of Ava, he returned to his own country, leaving his brother Apporaza to govern the late capital of the Birman king. All wore the aspect of tranquil submission, when there suddenly arose one of those men who are destined, by means almost invisible, to break the strongest rod of power, and to change the fate of empires. Alompra, a Birman of low extraction, was the chief of a small village, and was continued in this petty office by the victors. With one hundered devoted followers he attacked a band of fifty Peguese, whom he put to the sword; and afterwards defeated a small force sent against him; and, about the autumn of 1753, took possession of Ava, while the Peguese government seems to have been lost by mere infatuation. After repeated defeats Binga Della himself advanced against Alompra, and the war was conducted by fleets on the great river Irrawaddy, as well as by land, that of the Peguese being utterly defeated in close combat by that of the Birmans. Alompra, proceeding in his conquests, founded the town now well known by the name of Rangoon, which signifies "victory achieved;" and soon after chastised the people of Cassay, who had revolted from the Birman authority. In 1756 he blockaded Sirian, which yielded to his arms; and after having deprived the capital of any foreign aid by water, he advanced against the city of Pegu, situated on an extensive plain, and then surrounded with no mean fortifications, while the stupendous pagoda of Shomadoo served as a citadel. This capital was invested in January 1757, and in about three months became a prey to the Birmans. Alompra then proceeded to subdue the countries to the eastward, as far as the Three Pagodas, the ancient boundary between Pegu and Siam. Tavoy has been since added to the Birman possessions in this quarter.

Alompra next determined to chastise the Siamese, for the encouragement they had given to his rebellious subjects, and ordered a fleet to sail to Merghi, a sea-port belonging to the Siamese, which was easily taken, and was followed by the conquest of Tanaserim, a large and populous city.

The victor next advanced against the capital of Siam; but two days after the siege had commenced Alompra was seized with a deadly disease, which saved the Siamese from destruction. He died, within two days' march of Martaban, about the 15th May, 1760, regretted by his people, who at once venerated him as their deliverer, and as a great and victorious monarch. This founder of the Birman empire had not completed his fiftieth year; his person, strong and well proportioned, exceeded the middle size; and though his features were coarse, his complexion dark, and his countenance saturnine, there was a dignity in his deportment that became his high station, and which, like that of Oliver Cromwell, seems to spring from conscious power.

He was succeeded by his son Namdogee, who suppressed several insurrections, and died in 1764, leaving an infant son, Momien, whose uncle Shembuen, second son of the great Alompra, assumed the regency and afterwards the diadem.

Shembuen, to divert the national attention, as usual with usurpers, declared war against Siam; and in 1766 two armies entered that country from the N. and S. and, being united, defeated the Siamese about seven days' journey from their capital. The

Siamese king privately withdrew after a blockade of two months, and the city capitulated: a Siamese governor being appointed who swore allegiance to the Birman sovereignty, and engaged to pay an annual tribute.

The Chinese, apprehensive of the progress of these conquests, advanced an army from the province of Yunan, but were completely defeated by the Birmans. Policy spared the captives, who were invited to marry Birman wives, the Hindoo prejudices being here unknown. Shembuen rebuilt Awa Haung, or ancient Ava, the metropolis of the empire which had fallen to ruin during the late commotions. The Siamese, though vanquished, remained unsubdued: and there is an inveterate enmity betwixt the nations, which will prevent either servitude or alliance[5]. A Siamese prince assumed the monarchy, and in 1771 defeated the Birmans. Shembuen afterwards turned his arms to the west, and forced the raja of Cachar to pay homage to his power. He died at Ava in 1776, and was succeeded by his son Chenguza, whose tyrannical conduct occasioned a conspiracy, at the head of which was Shembuen Minderagee, the present monarch, younger brother of the deceased Shembuen. Chenguza was slain in 1782.

Soon after Minderagee withdrew the seat of government from Ava, and founded a new city to the N. E. where there is a deep and extensive lake called Tounzemaun, formed by the influx of the river, during the monsoon, through a narrow channel, which afterwards expands to a mile and a half broad, by seven or eight miles in length. Between this lake and the river Irrawady stands the new capital Ummerapoora, constructed of wood, but which has speedily become one of the most flourishing cities in the east, the situation being more strong than that of Ava.

The southern conquests of the Birmans had already extended as far as Merghi, and the northern provinces, formerly belonging to Siam, had been reduced to subjection and tribute. Minderagee determined to pass the mountains of Anoupec, and subdue Aracan, the raja or prince being of a supine character, and his subjects unwarlike, though they had never been reduced to pay homage to any foreign power. This conquest was commenced in 1783, and was speedily effected, the booty most highly valued, being an image of Gaudma, the Boodh of the Hindoos, made of burnished brass.

After this conquest the Birman arms were again turned against Siam, and in 1785 a fleet was sent to subdue the isle of Junkseylon, which carries on considerable trade in ivory and tin, and is the only remaining mart of Siamese trade on this coast. Meeting with a repulse, the Birman monarch left his capital at the head of 30,000 men, with a train of 20 field pieces; but was defeated by the king of Siam, who in his turn, failed in an invasion of the viceroyalty of Martaban, which comprehends Tavoy, Merghi, and all the Birman possessions to the south. In 1793 a treaty was ratified between the Birmans and Siamese, by which the latter ceded the western maritime towns as far S. as Merghi inclusive. But with this exception, and that of some northern provinces, the Siamese monarchy retains a considerable portion of its ancient fame. Hence it appears that the Birman empire can scarcely be computed to extend beyond the 102d degree of longitude, and that only in the part to the north of Siam.

[5] Symes, i. 171.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Laws. — Government. — Population. — Army. — Navy. — Revenues. — Political Importance.

RELIGION.] THE Birmans follow the worship of Hindostan, not as votaries of Brahma but as disciples of Boodh, which latter is admitted by Hindoos of all descriptions to be the ninth Avatar, or descent of the deity, in his capacity of preserver [1]. He reformed the doctrines contained in the Vedas, and severely censured the sacrifice of cattle, or even the depriving any being of life. By a singular transposition the name of Gotma, or Gaudma, who is said to have been a philosopher, about 500 years before Christ, and taught the religion of Boodh, is generally accepted for that of the divinity. This sect is said far to exceed in antiquity the followers of Brahma, and seems more widely diffused, extending even to China, where Fo is said to be the same with Boodh, who is also credibly supposed to be the Budz or Seaka of the Japanese. But when he is asserted to have been the Woden of the Goths, a striking dissonance appears between the peaceful author of happiness, and the God of War. Even Sir William Jones has not escaped these visionary ideas of antiquaries *; but where the imagination confounds, it is the business of judgment to discriminate. The Birmans of course believe in the transmigration of souls: after which the radically bad will be condemned to lasting punishment, while the good shall enjoy eternal happiness in the mountain Meru. They esteem mercy to be the chief attribute of the divinity.

LAWS.] The laws of the Birmans are inseparable from their religion. The sacred verses or forgeries of Menu are illustrated by numerous commentaries of the Munis, or old philosophers, and constitute the Dherma Sastree, or body of law. Both the religion and laws proceeded originally from Ceylon, and passed through Aracan to Miama. "The Birman system of jurisprudence is replete with sound morality, and in my opinion is distinguished above any other Hindoo commentary for perspicuity and good sense; it provides specifically for almost every species of crime that can be committed, and adds a copious chapter of precedents and decisions, to guide the inexperienced in cases where there is doubt and difficulty. Trial by ordeal and imprecation are the only absurd passages in the book; but on the subject of women it is to an European offensively indecent; like the immortal Menu it tells the prince and the magistrate their duty, in language austere, manly, and energetic [2]."

GOVERNMENT.] Though the form of government be despotic, yet the king consults a council of ancient nobles. There are no hereditary dignities nor employments; but all honours and offices, on the demise of the possessor, revert to the crown. The *tsaloe*, or chain, is the badge of the nobility, the number of strings or

[1] Symes, ii. 313.

* That great man embraced too wide a range for any human mind, and his decisions in Hindoo learning have since often been found rash and erroneous.

[2] Symes, ii. 326.

divisions denoting the rank of the person; being three, six, nine, or twelve, while the king alone wears twenty-four. Rank is also denoted by the form and material of various articles in common use.

The royal establishment is arranged with minute attention. The queens and princes have the title of Praw, which like the Latin Augustus, implies at once sacred and supreme. The eldest son of the monarch is styled Engy Teekien. Next in rank to the princes are the Woongees, or chief ministers of state, (the name implying "bearer of the great burthen,") who are three or four in number, and form the ruling council of the nation, issuing mandates to the Maywoons or viceroys of the several provinces, and in fact governing the empire, under the king's pleasure, whose will is absolute. There are other inferior ministers and secretaries, who have their distinct offices, so that the business of government is conducted with great regularity and precision.

Population.] "Of the population of the Birman dominions I could only form a conclusion from the information I received of the number of cities, towns, and villages in the empire; these I was assured by a person who might be supposed to know, and had no motive for deceiving me, amount to 8000, not including the recent addition of Arracan. If this be true, which I have no reason to doubt, and we suppose each town on an average to contain 300 houses, and each house six persons; the result will determine the population at 14,400,000. Few of the inhabitants live in solitary habitations; they mostly form themselves into small societies, and their dwellings, thus collected, compose their Ruas or villages; if therefore we reckon their numbers, including Arracan, at 17,000,000, the calculation may not be widely erroneous; I believe it rather falls short of than exceeds the truth. After all, however, it is mere conjecture, as I have no better data for my guidance than what I have related [3]."

Army and Navy.] Every man in the empire is liable to military service, but the regular army is very inconsiderable. During war the viceroys raise one recruit from every two, three, or four houses, which otherwise pay a fine of about 40l. sterling [4]. The family of the soldier is detained as hostages; and in case of cowardice or desertion suffer death, a truly tyrannic mode of securing allegiance. The infantry are not regularly clothed, but are armed with muskets and sabres; while the cavalry carry spears, about seven or eight feet in length. The royal magazines are said to contain about 20,000 miserable firelocks. But the war-boats form the chief military establishment, consisting of about 500, formed out of the solid trunk of the teak tree *, the length being from 80 to 100 feet, but the breadth seldom exceeding eight. They carry from 50 to 60 rowers, the prow being solid, with a flat surface, on which a piece of ordnance is mounted. Each rower is provided with a sword and lance; and there are 30 soldiers armed with muskets. The attack is impetuous, and chiefly conducted by grappling; but the vessels being low in the water, the greatest danger is that of being run down by a larger boat striking the broadside. Their naval actions thus recall to remembrance those of classical antiquity.

Revenues.] The revenue arises from one tenth of all produce, and of foreign goods imported; but the amount is uncertain. Yet as grants are commonly made in land or offices, and no money leaves the royal treasury except in cases of great emergency, it is supposed that the monarch possesses immense treasures.

Political Importance and Relations.] The political importance and relations of the Birman empire may considerably influence the commerce of the east, and may

[3] Symes, ii. 352. [4] Ib. 358.

* The teak tree abounds in this empire though rare in Hindostan, and works as easily as the oak, but is said to be more lasting. It must not be confounded with iron wood, which will turn the ege of an axe.

be considered as a barrier against the ambition of the Chinese, who might perhaps be induced to extend their possessions in this quarter, and might, in co-operation with the native princes, endanger our possessions in Hindostan. Such is, however, the superiority of European arms, that this event is little to be apprehended. But if the Birmans, as is not improbable, were to extend their authority over the whole of that part called India beyond the Ganges, they might, as being a most brave and determined nation, prove dangerous neighbours to our possessions in Bengal, especially if so far advanced in policy as to co-operate with the western princes of Hindostan. The temporary disgusts therefore between the British and the Chinese ought not to induce us to forget the greater danger from the Birmans, whose empire it cannot be our interest to enlarge, though policy will prevent our offering any open obstruction.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners. — Language. — Literature. — Cities. — Edifices. — Manufactures. — Commerce.

MANNERS AND CUSTOMS.] THE general disposition of the Birmans is srikingly contrasted with that of the Hindoos, from whom they are separated only by a narrow range of mountains, in many places admitting of an easy intercourse [1]. "Notwithstanding the small extent of this barrier, the physical difference between the nations could scarcely be greater, had they been situated at the opposite extremities of the globe. The Birmans are a lively inquisitive race, active, irascible, and impatient; the character of their Bengal neighbours is too well known as the reverse to need any delineation; the unworthy passion of jealousy, which prompts most nations of the east to immure their women within the walls of an haram, and surround them with guards, seems to have scarcely any influence over the minds of this extraordinary and more liberal people. Birman wives and daughters are not concealed from the sight of men, and are suffered to have as free intercourse with each other, as the rules of European society admit; but in other respects women have just reason to complain of their treatment; they are considered as not belonging to the same scale of the nation as men, and even the law stamps a degrading distinction between the sexes; the evidence of a woman is not received as of equal weight with that of a man; and a woman is not suffered to ascend the steps of a court of justice, but is obliged to deliver her testimony on the outside of the roof. The custom of selling their women to strangers is confined to the lowest classes of society, and is perhaps oftener the consequence of heavy pecuniary embarrassment, than an act of inclination; it is not however considered as shameful, nor is the female dishonoured; partly perhaps from this cause, and partly from their habits of education, women surrender themselves the victims of this barbarous custom with apparent resignation. It is also said that they are very seldom unfaithful to their foreign masters; indeed they are often essentially useful, particularly to those who trade, by keeping their accounts, and transacting their business; but when a man departs from the country he is not suffered to carry his temporary wife along with him; on that point the law is exceedingly rigorous, every ship before she receives her clearance, is diligently searched by the officers of the custom-house: even if their vigilance were to be eluded the woman would be quickly missed; and it would be soon discovered in what vessel she had gone, nor could that ship ever return to a Birman port, but under penalty of confiscation of the property, and the infliction of a heavy fine and imprisonment on the master: female children also, born of a Birman mother, are not suffered to be taken away. Men are permitted to emigrate: but they think that the expatriation of women would impoverish the state, by diminishing the sources of its population [2]."

The women though free are generally too much occupied in the labours of the loom to admit of infidelity, the offspring of idleness. In war the men display the ferocity

[1] Symes, ii. 383.

[2] Ib. 384.

of savages, while in peace they can boast a considerable degree of gentleness and civilization. The Birman year comprises twelve months of 29 or 30 days alternately, a month being interposed every third year. The subdivision of the month is peculiar, as they number the days not only from the new moon but from the full, which last is called the decreasing moon. They are fond of poetry and music, and among their instruments is the heem, resembling the ancient pipe of Pan, formed of several reeds neatly joined together, and sounded by a common mouth piece, so as to produce a plaintive melody.

Language and Literature.] The alphabet represents 33 simple sounds, and is written from left to right like the European. The Birman books are more neatly executed than those of the Hindoos, and in every *kioui*, or monastery, there is a library or repository of books. Colonel Symes was surprised at the number contained in the royal library, in which the large chests probably amounted to 100[3]. "The books were regularly classed, and the contents of each chest were written in gold letters on the lid. The librarian opened two, and shewed me some very beautiful writing on their leaves of ivory, the margins of which were ornamented with flowers of gold, neatly executed. I saw also some books written in the ancient Palli, the religious text. Every thing seemed to be arranged with perfect regularity, and I was informed that there were books upon divers subjects; more on divinity than on any other; but history, music, medicine, painting, and romance had their separate treatises. The volumes were disposed under distinct heads, regularly numbered; and if all the other chests were as well filled as those that were submitted to our inspection, it is not improbable that his Birman majesty may possess a more numerous library than any potentate, from the banks of the Danube to the borders of China[4]."

The study of the laws and national religion must of course constitute a considerable branch of education among the great; that of the poor seems to be utterly neglected.

Cities.] Ava, the ancient capital, has been permitted to sink into ruin since the recent foundation of Ummerapoora, on the eastern side of a great river which flows into the Irrawady, if, in the imperfect geography of these countries, we regard the Keen-Duen as the chief stream, a supposition little countenanced by Mr. Wood's map, inserted in Colonel Symes's account, in which the Keen-Duen is a small river flowing into the Irrawady, which last is said to pass by the capital. On the opposite side of the river is Chagaing, once a city of imperial residence, seated partly at the foot and partly on the side of a rugged hill, broken into eminences, each of which is crowned by a spiral temple. Ummerapoora the capital, with its spires, turrets, and lofty piasath, or obelisk, denoting the royal presence, seems to rise like Venice from the waters being placed between a lake on the S. E. and the large river with numerous isles on the N. W. The lake is called Tounzemahn, from a village on the opposite side ornamented with tall groves of mango, palmyra, and cocoa trees. The number and singularity of the boats that were moored in the lake, and the surrounding amphitheatre of lofty hills, conspired to render the scene grand and interesting. The fort is an exact square, with public granaries and store rooms; and there is a gilded temple at each corner, nearly 100 feet in height, but far inferior to others in the vicinity of the capital. In the centre of this fort stands the royal palace, with a wide court in front, beyond which is the Lotoo, or hall of council, supported by 77 pillars disposed in eleven rows. The extent and population of this city have not been accurately stated, but are probably inconsiderable.

Ava, formerly the capital, is also styled Aungwa, but is in a state of ruin. "The walls are now mouldering into decay, ivy clings to the sides, and bushes, suffered to

[3] Symes, iii. 93. [4] Ib. 96.

grow

grow at the bottom, undermine the foundation, and have already caused large chasms in the different faces of the fort. The materials of the houses consisting chiefly of wood had, on the first order for removing, been transported to the new city of Ummerapoora: but the ground, unless where it is covered with bushes or rank grass, still retains traces of former buildings and streets. The lines of the royal palace, of the Lotoo, or grand council hall, the apartments of the women, and the spot on which the Piasath or imperial spire had stood, were pointed out to us by our guide. Clumps of bamboos, a few plantain trees, and tall thorns occupy the greater part of the area of this lately flourishing capital. We observed two dwelling houses of brick and mortar, the roofs of which had fallen in; these our guides said had belonged to Colars, or foreigners; on entering one we found it inhabited only by bats, which flew in our faces, whilst our sense of smelling was offended by their filth, and by the noisome mildew that hung upon the walls. Numerous temples, on which the Birmans never lay sacrilegious hands, were delapidating by time. It is impossible to draw a more striking picture of desolation and ruin [6]."

Pegu, formerly the capital of a kingdom, is also in ruins; it appears to have been a quadrangle, each side measuring nearly a mile and a half. The wall must have been about 30 feet high, and in breadth at the base not less than 40; but only constructed of bricks, cemented with clay [7]. It was razed by Alompra in 1757, the Praws, or temples being spared; and of these the vast pyramid of Shomadoo has alone been reverenced; and kept in repair. The present Birman monarch has endeavoured to conciliate the Taliens or native Peguese, by permitting them to rebuild their ancient city, within the site of which a new town has accordingly been reared; but Rangoon possesses so many superior advantages that the merchants will scarcely abandon it for this new foundation. The city occupies about half its former extent, and is the residence of the Maywoon, or governor of Pegu. It is decorated with that extraordinary edifice the Shomadoo, seated on a double terrace, one side of the lower being 1391 feet, of the upper 684. The building is composed of brick and mortar, octagonal at the base, and spiral at the top, without any cavity or aperture. At the summit is a Tee, or sacred umbrella, of open iron work gilt, 56 feet in circumference; the height of the whole being 361 feet, and above the inner terrace 331 feet. Tradition bears that it was founded about 500 years before Christ. A more complete idea of this very singular edifice may be obtained from the print published by Colonel Symes, than any verbal description can convey.

One of the chief ports of the Birman empire is Rangoon, which, though, like the capital of recent foundation, is supposed to contain 30,000 souls. Towards the mouth of the river Pegu stands Sirian, formerly one of the chief ports of that kingdom, and of considerable commerce when in possession of the Portuguese. It was particularly celebrated for the export of rubies, and other precious stones, which seem however to be chiefly found in the northern mountains.

Martaban was another sea-port of considerable eminence, till the harbour was impeded by order of the Birman emperor. Of Tavoy and Merghi little is known; but Tanaserim maintains the dignity of a city.

The grand river of Irrawady is bordered with numerous towns and villages. Persain, or Bassien, stands on its western branch. At a considerable distance to the north is Prome, celebrated as the scene of many long sieges and bloody conflicts. The number of inhabitants exceeds that of Rangoon. Pagahm is also a considerable place. Nor must Aracan, a recent acquisition, be forgotten, which is divided by several canals derived from a river of the same name.

[6] Symes, ii. 270.

[7] Ib. ii. 51.

Towards

Towards the Chinese frontier are Quangtong, corresponding in name with the distant province called Canton by Europeans; Bamoo; and in the country of Cassay, Munnipora. Monchaboo is a considerable town to the north of the capital.

EDIFICES.] The most remarkable edifice is the Shomadoo before described. The Kioums are often of singularly rich and fantastic architecture, as may be observed in the delineation given by Colonel Symes; who has also published a view of the grand Hall of Audience, perhaps as splendid an edifice as can well be executed in wood. His reception at the "golden feet," such is the term used for the imperial presence, was also remarkably grand, the pomp in some degree corresponding with that of the ancient Byzantine emperors.

INLAND NAVIGATION.] Nature has so amply provided the means of inland navigation by the numerous mouths and streams of the grand river Irrawady, that additional industry seems superfluous.

MANUFACTURES.] The Birmans excel in gilding, and several other ornametal manufactures. Their edifices and barges are constructed with singular oriental taste and elegance; and at Chagain is a manufacture of marble divinities, the material being remarkably fine and almost transparent.

COMMERCE.] A considerable trade is carried on between the capital and Yunan, the nearest province of China, consisting chiefly in cotton, with amber, ivory, precious stones, and beetle nut; the returns being raw and wrought silks, velvets, gold leaf, preserves, paper, and some utensils of hard ware. Several thousand boats are annually employed in transporting rice from the lower provinces to supply Ummerapoora, and the northern districts. Salt and gnapee, a kind of fish sause used with rice, are also articles of internal commerce. European broad cloth and hardware, coarse Bengal muslins, china ware, and glass, are imported by foreigners. The Birmans, like the Chinese, have no coin: but silver in bullion, and lead, are current.

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons. — Face of the Country. — Rivers. — Lakes. — Mountains. — Forests. — Botany. — Zoology. — Mineralogy. — Isles.

CLIMATE AND SEASONS.] THE vigorous health of the natives attests the salubrity of the climate, the seasons being regular, and the extremes of heat and cold little known; for the intense heat which precedes the beginning of the rainy season* is of short duration.

FACE OF THE COUNTRY.] The face of the country affords almost every variety, from the swampy Delta of the Irrawady to pleasant hills and dales, and considerable ranges of mountains. "The soil of the southern provinces of the Birman empire is remarkably fertile, and produces as luxuriant crops of rice as are to be found in the finest parts of Bengal. Farther northward the country becomes irregular and mountainous; but the plains and valleys, particularly near the river, are exceedingly fruitful; they yield good wheat, and the various kinds of small grain, which grow in Hindostan; as likewise legumes and most of the esculent vegetables of India. Sugar canes, tobacco of a superior quality, indigo, cotton, and the different tropical fruits in perfection, are all indigenous products of this favoured land [1]." Agriculture seems to be pursued with considerable avidity, but the mode has not been particularly illustrated.

RIVERS.] The chief river of the Birman empire is the Irrawady, supposed to be the Kenpou of Tibet, which, instead of being the river of Keen Duem, probably passes by Moguang to Bamoo, and thence by Ummerapoora and Prome towards the sea, which it joins by many mouths, after a comparative course of near 1200 British miles. The Keen Duem seems to rise in the mountains towards Asam, being of much inferior size where it joins the Irrawady.

The river Sitang is next on the east, after passing the small river of Pegu, but seems to be a kind of remote branch of the Irrawady.

The Thaluan enters the sea near Martaban, being supposed to be the Nou Kiang of Tibet, which may with more probability be the river of Siam. In either case the length of its course exceeds that of the Irrawady, though not being fed by such numerous streams it cannot equal it in size. The river of Siam, or Maygue, also pervades a part of the Birman territory. The geography of all these rivers remains imperfect.

Dr. Buchanan observes in general, on the errors of former geographers, that the river of Arracan is not so considerable as has been supposed, but rises in hills at no great distance to the north, having been confounded with the Keen Duem, or great western branch of the Irrawady; while what is called the western branch of that river is in fact the eastern [2]. His assertion that the Loukiang or Noukiang of D'Anville is the same with the Thaluan, seems liable to doubt. He adds that the river of Pegu, formerly supposed to come from China, rises among hills about 100 miles from the sea, which form the boundary between the Birman and Pegu kingdoms: that between the

* See Hindostan. [1] Symes, ii. 372. [2] Id. ii. 413.

rivers of Pegu and Martaban there is a lake from which two rivers proeeed, one running N. to old Ava, where it joins a river that flows into the Irrawady, while the other passes S. to the sea, being the Sitang; that the rivers of China, which were supposed to be the sources of that of Pegu, are those of the river of Siam; and that the latter communicates with that of Cambodia by a large branch called the Anan *.

LAKES.] It would appear that there must be numerous lakes in this empire, which abounds with mountains; but the imperfect state of its geography has supplied no materials for their description.

MOUNTAINS.] It is probable that the highest range of mountains is on the frontiers of Tibet. The other ranges are delineated as passing N. and S., but the names are not indicated, except those of Anoupec, between Ava and Arracan, and a small range running E. and W., which supplies the sources of the river of Pegu.

FORESTS.] The forests are large and numerous, many parts remaining in a state of nature. They supply almost evey description of timber that is known in Hindostan; and, about four days' journey to the N. of the capital, firs grow in abundance. But the lord of the Birman forest is the teak tree, superior to the European oak, which is there unknown: the teak flourishes in many parts of the empire, to the N. of the capital as well as to the S.

BOTANY.] All the countries that compose the rich and extensive territory of India beyond the Ganges, including the Birman empire, and the dominions of Pegu, Siam, Cambodia, Cochin-China, and Malacca, bear such a similarity to each other in their vegetable productions as far as they have been investigated, as renders it impossible to give a general and separate view of their respective floras without continual repetitions. Certain districts also in further India have been examined with considerable attention†, while others similarly situated have remained almost wholly overlooked: it is only therefore from analogy (a highly probable one indeed) that we can conjecture the most characteristic species of their indigenous plants. The mountains of the interior, and in general the whole northern frontier, are still totally unexplored, and the deep forests infested with tigers, must ever continue, even in the more accessible parts, to oppose no trifling obstacles to the spirit of scientific adventure.

It is in those parts of the torrid zone that abound with water, and where, from the influence of the monsoons, the country is extensively flooded every year, that vegetation assumes a vigour and sublimity wholly inconceivable by the native of more temperate climates: everlasting verdure, grace and majesty of form, height and amplitude of growth, are the distinguishing attributes of their trees, compared with which the monarchs of our forests sink into vegetables of an inferior order; the same exuberance of nature is conspicuous in their shrubs and herbaceous plants, in their blossoms and their fruits, whose vivid brilliancy of colour, singularity of shape, aromatic fragrance, and exalted flavour, reduce to relative insignificance the puny produce of European summers.

Here rises in proud magnificence the white sandal tree, whose fragrant wood, mixed with that of the alöexylum verum, also a native of these regions, is in high request through the whole east for the grateful odour of its smoak. The teak tree is at least equal even to British oak as a durable material for ship-building: the true jet black

* D'Anville, in his map of Asia, has supposed the Sampou, or Berhampooter, to be the same with the river of Ava or the Irrawady. The Nou Kiang he imagines the same with the river of Pegu: while the large river of Siam is supposed to have a comparatively short course. Such are the gross errors of this eminent geographer, whose works Mr. Gibbon pronounces to be perfect, while in fact they only shew the very imperfect state of geography even in his time.

† Zoureiro Flora Cochinchinensis. Mem. de l' Acad. des Sciences, 1666.

ebony wood is the produce of the ebenoxylum verum, one of the indigenous trees of Cochin-China. The sycamore fig, the Indian fig, and the banyan tree, itself a grove, by the breadth of their leaves and the luxuriance of their foliage, afford a most delicious shelter, impenetrable even by the meridian ardour of an Indian sun. Mingled with these, and emulating them in size, are the bignonia indica, the nauclea orientalis, corypha seribus, one of the loftiest of the palm trees, and excoecaria Cochinchinensis, remarkable for the crimson under surface of its leaves.

Of the plants that are used in medicine or the arts some of the most important are natives of further India: the nature of this work does not admit of specifying the whole, but those of most consequence are the following. The ginger and cardamom, two pleasant aromatics, are found wild on the river sides, but are also cultivated in great abundance; the turmeric, whose principal use in Europe is as a dyeing drug, is largely used by the natives of the coast to tinge and flavour their rice and other food: the leaves of the betel pepper, with the fruit of the black and long pepper, and the fagaria piperita, are the most favourite of their native spices, to which may also be added three or four kinds of capsicum. Among the various dying drugs may be distinguished justicia tinctoria, yielding a beautiful green tinge; morinda umbellata, gamboge and carthamus, all of them yellow dyes, the red wood of the lawsonia spinosa and Cæsalpinia sappan; and the indigo; the gum resin called dragon's blood appears to be produced by several species of plants, and two of these, the dracæna ferrea and calamus rotang, are natives of Cochin-China. The bark of the nerium antidysentericum, called codagapala, and that of the laurus culilavan, the fruit of the strychnos nux vomica, the cassia fistula, the tamarind, and the croton tiglium, the inspissated juice of the aloe, the resin of the camphor tree, and the oil of the ricinus, are all occasionally imported from this country for the European dispensaries. The cinnamon laurel grows in abundance on each side of the Malayan peninsula, and sometimes, as it is said, accompanied by the nutmeg. The sugar cane, the bamboo, and the spikenard, the three most celebrated plants of the grass tribe, are found throughout the whole country; the two former in rich swamps, and the latter on dry hills. The sweet potatoe, mad-apple and love-apple, gourds, melons, water-melons, and a profusion of other esculent plants, enrich this favoured country; all these however require cultivation: but the plaintain, the cocoa-nut, and sago palm, furnished by the free unstinted bounty of nature, contribute most plentifully to satisfy the wants of the inhabitants. Of native fruits they possess a vast variety and an inexhaustible abundance. The vine grows wild in the forests, but from the excessive heat and want of cultivation its fruit is far inferior to that of the south of Europe: to compensate however for this deficiency, they have the luscious mango, the pine apple, the sapindus edulis (the li-tschi of the Chinese), the mangosteen plum, the averrhoa carambola, the custard apple, the papaw fig, the orange, the lemon and lime, and a multitude of other exquisite fruits, whose very names are scarcely known in Europe. The attempt to give even a very faint idea by words of the infinite multitude of ornamental plants that cover the country would be wholly in vain; a few have been introduced into our hot-houses, where they continue a languid imperfect existence, and of which, faded and sickly as they are, they constitute the chief glory.

Zoology.] The animals in general correspond with those of Hindostan. Elephants principally abound in Pegu. The horses are small, but spirited. The ichneumon, or rat of Pharoah, is rather peculiar. A kind of wild fowl called the henza, and by the Hindoos the braminy goose, has been adopted as the symbol of the empire, like the Roman eagle. The Birmans abstain from animal food except game; but there are many buffaloes.

MINERALOGY.] The mineralogy of this region, the Golden Chersonese of the ancients, is opulent, and some products rather singular. While Malacca, which has hitherto been supposed the Golden Chersonese, scarcely produces any mineral except tin, and is in truth a poor country, only celebrated as an emporium of Portuguese trade with China, the rivers of Pegu, on the contrary, still continue to devolve particles of gold; and their sands must in ancient times have been yet more prolific of that precious metal. Nor is it improbable that the practice of gilding the roofs and spires of temples and palaces may ascend to ancient times, as we are told that the Shomadoo was built about 500 years before the Christian era; in which case the splendid appearance might naturally give rise to the classical appellation of the country. Colonel Symes informs us that "gold is discovered in the sandy beds of streams which descend from the mountains. Between the Keen Duem and the Irrawady, to the northward, there is a small river colled Sho Lien Kioup, or the Stream of Golden Sand [3]." In many regions gold is found intermingled with silver; and six days' journey from Bamoo (probably towards the north) there are mines of gold and silver at Badouem, near the frontiers of China. By a singular conjunction, there are, according to the same authority, mines of gold, silver, rubies, and sapphires, at present open on a mountain called Wooboloo-taun, near the river Keen Deum.

There is also abundance of inferior minerals, as tin, iron, lead, antimony, arsenic, and sulphur: and amber, a rare and singular product, is not only dug up in large quantities near the river Irrawady, but is uncommonly pure and pellucid.

Diamonds and emeralds are not found in the Birman empire; but it affords amethysts, garnets, very beautiful chrysolites of a greenish yellow; with the inferior products of jasper, loadstone, and marble, the quarries of the latter, which equals the best Carara, being only a few miles from Ummerapoora.

The most singular product of Pegu is the ruby, a stone next to the diamond in value, and which, according to Sheldon, is found in a mountain between Siriam and Pegu, this substance being almost as peculiar as the diamond is to Hindostan. By Colonel Symes's account, rubies and sapphires are also found in the north-western part of the empire; but the most valuable mines are in the vicinity of the capital, or rather about 30 British miles to the north. The gem called the Siriam garnet, or vulgarly and improperly *Syrian*, is also found only in Pegu.

ISLES.] The Birmans seem to be in possession of several isles in the gulph of Martaban, the Magnus Sinus of antiquity, and of others to the south and west, but too minute to demand description, if there even were sufficient materials *.

[3] Symes, iii. 375.

* See Forrest's Voyage from Calcutta to the Archipelago of Mergui, 4to.

ARACAN.

THIS kingdom has been already mentioned in the preceding account of the Birman empire. The materials concerning it are scanty and imperfect, though the extent of coast seems to invite commerce. The air is pure, and contagious disorders are unknown. The plains are said to be extremely fertile; and delicious valleys present numerous flocks of cattle, but horses are rare, and the land is laboured by buffalos. The rainy season, improperly called winter, begins in April and ends in October. The other months are dry and afford abundance of vegetables, fruits, and grain; but wheat and rye are unknown*.

The capital gives a great idea of the kingdom, its extent being said to fill several leagues; and oriental exaggeration adds, that the number of inhabitants equals that of the most populous European cities, while the temples are computed at six hundred. The palace of the monarch was of distinguished wealth, and the golden hall was so styled, because it was covered from top to bottom with that precious metal. A hundred ingots of gold, each weighing forty pounds, were suspended from the canopy, which was also of massy gold, Such are the tales of the east, but the judicious reader will think that I am copying Mendez de Pinto, or some other extravagant traveller, and will observe that, when the Birmans conquered this country, in 1783, the richest booty was an idol of brass.

The natives of Aracan are said to be averse to commerce, and to a maritime life; but the Mahometans export elephants to Hindostan and Persia, whence they return linens, silks, and spices. Aracan chiefly abounds in wood, ivory, lead; and, if we believe our author, likewise in tin.

A large and flat forehead distinguishes the inhabitants of Aracan, but is the work of fashion and caprice, by the application of a leaden plate in early infancy. Their nostrils are large, and their ears said to be even monstrous. Their dress consists in a cotton shirt covering the arms, but on occasions of ceremony they wear long robes. Their hair is woven in tresses, while that of the women is disposed in floating buckles, with all the skill of an European coquette.

Their repasts are not of an enticing kind, consisting of rats, mice, serpents, and other animals little known in European cookery. Fish must be kept a considerable time before it can provoke their palate; and their drink is pure water, or the juice of the palm tree.

Virginity is not a respected virtue, the indolence of the husbands preferring the temporary brides of the foreign seamen. The monarch, shut up in his palace, vegetates in insipid luxury with his queen and concubines. Twelve girls are annually exposed to the sun; and the fine linen which imbibes their perspiration is sent to the monarch, that from the odour he may judge of the fairest. It is even said that, as in some countries in Africa, the royal guard is composed of armed concubines.

Medicine is only practised by the priests called Raulins, who breathe upon the sick, pronounce mysterious words, and offer sacrifices.

* Turpin, ii. 362.

The dead bodies of the great are committed to a funeral pile, but those of the poor are thrown into the rivers, as our author asserts, though the practice be contradictory to that of all other nations. He adds, however, that the bodies are sometimes exposed to the birds of prey, a well-known custom of the Persees. It is esteemed an act of piety to hasten the fatal termination of a lingering disease.

Their temples are said to resemble pyramids; and they have domestic gods, whose image they sometimes impress on their arm with heated iron. There are processions of idols, as in Hindostan, when many voluntary victims are crushed by the wheels of the car.

There are three orders of priests; and their chief, who resides in the isle of Munay, has great authority, the king, though despotic, being uncovered in his presence, and yielding the precedence in ceremonies. All the priests live in perpetual celibacy, and the violation of this purity implies instant degradation. Some of these religious men live like hermits, amidst rocks, dark forests, and deserts; while others inhabit palaces at the royal expence.

Among other small kingdoms in the vicinity of the Birman empire, may be mentioned Jangoma, or perhaps Yangoma, on the north of Siam. The extent is said to be various, at short epochs, the revolutions being frequent. This country, according to the Siamese reports, is governed by priests. The inhabitants are said to be tall and well proportioned, their sole garment in this hot climate being a cincture of linen. The women are famed in the east for their gallantry and beauty, in which last quality they surpass those of Pegu; and voluptuous monarchs think their harem enriched and adorned by a concubine from Jangoma. The common food is rice, and the country is also said to abound in musk, pepper, silk, gold, silver, copper, and gum-benjamin. But it is sufficient to mention this country, only known by such doubtful relations.

Between Aracan and our possessions, in Bengal, is the small and mountainous country of Tibra, which is said to be only remarkable for a mine of gold. Secure in their mountains, the people are happy, because they are unknown.

MALAYA OR MALACCA.

Progressive Geography.—Name and Extent.—Language.—Divisions.—Products.—City of Malacca.—General Remarks on the Malays.—History of Malacca.—Isles of Andaman and Nicobar.

HAVING thus finished the description of the chief native empires of Asia, a foreign power, that of the English in Hindostan, will naturally attract the next attention, as perhaps not unequal in real and effective force even to the greatest of these empires. While the English colonies in America claim a decided preponderance over any power on that continent, it is not a little surprizing to behold the natives of a remote European isle exercising such sway in Asia, and influencing the councils of the most remote potentates. The colony established in New Holland is also a striking and singular feature in human history; and will probably secure lasting ascendency in a region before unknown. Were Egypt to yield to the British arms, it might be asserted that the English name is pre-eminent in every quarter of the globe*. Such are the fruits of national freedom, the parent of industry and enterprize.

But as the British empire in Hindostan only embraces a comparatively small part of that extensive region, indissolubly connected with the others by identity of population, manners, and laws, it seems preferable to follow a plan merely geographical in describing the remaining states of Asia; and after completing the account of those beyond the Ganges, to proceed to Hindostan, Persia, and Arabia.

In the same view of geographical connection, where the political weight of the state deserves little consideration, either from power or durability it will be proper, after the preceding description of the Birman territories, to subjoin some account of that peninsula appended to them on the south, and styled Malaya or Malacca.

PROGRESSIVE GEOGRAPHY.] This Chersonese was certainly unknown to the ancients and seems to have escaped the knowledge of Marco Polo, though the isle of Sumatra appears to have been known to him by the name of Java Minor, if this be not his Maletur, where he says there was abundance of spices and the natives had a proper and peculiar speech†.

However this be, the Portuguese are regarded as the first discoverers of Malacca, to which they were led by the vain idea of finding the golden Chersonese of the ancients. When Sequeira reached this peninsula in 1509, he found it subject to Mahmud, a

* This event has since happened, but Egypt is resigned to Turkish barbarism.

† See in the account of the Asiatic islands a note on this subject. Some may imagine that his Boeach or Loeach is perhaps Levek or Camboja (D'Anville's Asia.) But it seems more probable that Boeach is the northern part of Malacca, and Maletur the southern; for his Garbinius is the S. W. point, and Sciroccus the S. E.

Mahometan

Mahometan prince; while the capital, Malacca, had acquired some consideration from its favourable position, as a mart of trade between China and Hindostan. In 1511 the Portuguese conquered the peninsula.

NAME.] The name is derived from the Malays, who are mostly Mahometans, and in some degree civilized; but the inland parts seem to be possessed by a more rude native race, little known amidst the imperfection of materials concerning this country, neither the Portuguese nor Dutch being eminent in scientific precision. The northern limits are not strictly defined; but Malacca is about 80°, or near 560 British miles in length by about 150 miles of medial breadth, a territory sufficiently ample for a powerful monarchy, had its native productions corresponded with its extent.

LANGUAGE.] As the Malays have established several governments in Sumatra, the best ideas concerning them may be derived from Mr. Marsden's history of that isle*. Their language has been called the Italian of the east, from the melody of frequent vowels and liquids; and the above intelligent traveller has produced the following specimen:

Apo goono passang paleeto
Callo teedah dangan soomboonia?
Apo goono bermine matto
Callo teedah dangan soongoonia?

What signifies attempting to light a lamp
If the wick be wanting?
What signifies making love with the eyes,
If nothing in earnest be intended?

The Malays use the Arabic character; and an influx of words of that language has followed the adoption of the Mahometan religion†. They write on paper, using ink of their own composition, and pens made of the twigs of a tree. The purest Malay is still supposed to be spoken in the peninsula and has no inflexion of nouns or verbs.

DIVISIONS.] Though the manners and customs of the Malays be deeply tinctured with those common to other Mahometans, yet in the inland parts of the country the people remain nearly in a savage state, and do not partake of the civilization of the adjacent kingdoms of Pegu and Siam. In the last century Mandelslo, or rather Olearius, who published his voyage, describes Malacca as divided into two kingdoms, that of Patani in the north, and that of Johor in the south[1]. The town of Patani was inhabited by Malays and Siamese; and the people were Mahometans tributary to Siam. The town is built of reeds and wood, but the mosk of brick; and the commerce was conducted by the Chinese and the Portuguese settlers, the native Malays being chiefly employed in fishing and agriculture. According to this traveller there are continual rains with a N. E. wind during the months of November, December, and January. Agriculture was conducted with oxen and buffalos, the chief product being rice. There was abundance of game and fruits, and the forests swarmed with monkeys, tigers, wild boars, and wild elephants. From the kingdom of Patani the Portuguese used yearly to purchase about 1500 cattle for their settlement at Malacca.

The kingdom of Johor occupied the southern extremity of the Chersonese, the chief towns being Linga, Bintam, Carimon, and Batusaber[2]; which last was the

* A new edition of this valuable work is just published with improvements.

† Hence Thunberg, ii. 228, has ridiculously supposed the Malay to be a dialect of the Arabic. It is of Sanscrit origin. As. Res. iv. 217.

[1] Vol. i. col. 338. edit. 1727, 2 vols. fol.

[2] Col. 342.

capital

was the capital of the kingdom, being situated about six leagues from the sea on the river Johor, in a marshy situation, so that the small houses were obliged to be raised about eight feet from the ground. All the country belonging to the king, lands were assigned to any person who demanded them, but the Malays were so indolent that the country was chiefly left to the wild luxuriance of nature. Even in the time of this traveller the Malayan language was esteemed the most melodious in the east, and as universal as the French in Europe, a remark which has been recently repeated by Thunberg.

According to the curious description and map of Valentyn* the Peninsula of Malacca is bounded on the north by the river Rindang which runs by Ligore to the east, and by a small range of hills dividing it from the kingdom of Siam, and contains five kingdoms or rather provinces, receiving their denominations from their respective capitals. On the eastern coast are those of Patani and Pahang followed by the most southern kingdom of Djohor or Johor. On the western coast are those of Keidah and Peirah followed by another province called the Malay coast and of which the capital is Malacca,

PRODUCTS.] The inland part of the Malayan peninsula seems to remain full of extensive aboriginal forests; nor do the ancient or modern maps indicate any towns or villages in these parts. The indolence of the inhabitants has prevented the country from being explored; but it produces pepper, and other spices, with some precious gums and woods, among which perhaps the teak may be found. The chief mineral is tin, and the produce of gold seems to have been very modern and temporary †.

The form of the Malay government may be conceived from those transplanted to Sumatra, and described by Mr. Marsden[3]. The titles of the sultans or rajas are numerous and fantastic. Next in rank are a kind of nobles, who in Sumatra are called Dattoos, to whom the others are vassals.

MALACCA CITY.] The city of Malacca, which seems to have been founded by Mahometans in the thirteenth century, was held by the Portuguese till 1641, when it was seized by the Dutch. It was considered as situated in the southern kingdom of Johor, on the western side of the peninsula; and in the seventeenth century was supposed to contain 12,000 inhabitants, of which however only 3000 dwelled within the walls. Not above 300 were native Portuguese, the others being a mixed race of Mahometan Malays, accounted among the chief merchants of the east. The Portuguese settlement did not extend above five leagues around; yet became highly important from its advantageous position for Indian and Chinese commerce[4].

The mean and disgraceful jealousy of the Dutch concerning their oriental possessions renders the recent accounts of this city imperfect.

MALAYS.] In general the Malays are a well made people, though rather below the middle stature, their limbs well shaped, but small, and particularly slender at the wrists and ancles. Their complection is tawney, their eyes large, their noses seem rather flattened by art than nature; and their hair is very long, black, and shining.

Besides the tiger and elephant, Malacca produces the civet cat described by Sonnerat, who also mentions that wild men are found in this peninsula, perhaps the noted Orang

* Description of the Dutch East India provinces, &c. in the Dutch language, published at Dort, 1726, 8 volumes folio, vol. vii.

† Hamilton informs us, p. 73, that Quedah and Perah are rich in tin; and p. 83, that a high mountain on the N. E. of Malacca gives source to several rivers that roll gold dust in small quantities. He adds, p. 152, that the river Pahaung, which rises at a considerable distance and runs near the town of Malacca, contains gold which is mostly found in the deepest parts, lumps about five or six ounces in weight having been found at the depth of from three to ten fathoms. But these are modern discoveries, and even now the tin and pepper are regarded as the chief products.

[3] 267. 283. [4] Mandelslo, i. Col. 337.

Outangs. Some singular birds are also found; and Malacca likewise produces a most delicious fruit called the mangosten.

In imitation of Mr. Pennant[5], this account shall be enriched with a few extracts from M. le Poivre's philosophical voyages, that judicious observer having given a more just idea of the Malays than any other traveller.

" Beyond the kingdom of Siam is the peninsula of Malacca, a country formerly well peopled, and consequently well cultivated. This nation was once one of the greatest powers, and made a very considerable figure in the theatre of Asia. The sea was covered with their ships, and they carried on a most extensive commerce. Their laws however were apparently very different from those which subsist among them at present. From time to time they sent out numbers of colonies, which one after another peopled the islands of Sumatra, Java, Borneo, Celebez or Macassar, the Moluccas, the Philippines, and those innumerable islands in the Archipelago which bound Asia on the east, and which occupy an extent of 700 leagues in longitude from E. to W. by about 600 of latitude from N. to S. The inhabitants of all these islands, those at least upon the coast, are the same people. They speak almost the same language, have the same laws, the same manners. Is it not somewhat singular that this nation, whose possessions are so extensive, should scarce be known in Europe? I shall endeavour to give you an idea of those laws and those manners; you will from thence easily judge of their agriculture.

" Travellers who make observations on the Malays, are astonished to find in the centre of Asia, under the scorching climate of the line, the laws, the manners, the customs, and the prejudices, of the ancient inhabitants of the north of Europe. The Malays are governed by feudal laws, that capricious system, conceived for the defence of the liberty of a few against the tyranny of one, whilst the multitude is subjected to slavery and oppression.

" A chief, who has the title of king or sultan, issues his commands to his great vassals, who obey when they think proper; these have inferior vassals, who often act in the same manner with regard to them. A small part of the nation live independent, under the title of *Oramcai* or noble, and sell their services to those who pay them best; whilst the body of the nation is composed of slaves, and lives in perpetual servitude.

" With these laws the Malays are restless, fond of navigation, war, plunder, emigrations, colonies, desperate enterprises, adventures, and gallantry. They talk incessantly of their honour and their bravery, whilst they are universally considered by those with whom they have intercourse as the most treacherous, ferocious people on the face of the globe; and yet, which appeared to me extremely singular, they speak the softest language of Asia. What the Count de Forbin has said, in his memoirs of the ferocity of the Macassars, is exactly true, and is the reigning characteristic of the whole Malay nations. More attached to the absurd laws of their pretended honour than to those of justice or humanity, you always observe that amongst them the strong oppress and destroy the weak; their treaties of peace and friendship never subsisting beyond that self-interest which induced them to make them, they are almost always armed, and either at war amongst themselves, or employed in pillaging their neighbours.

" This ferocity which the Malays qualify under the name of courage, is so well known to the European companies who have settlements in the Indies, that they have universally agreed in prohibiting the captains of their ships, who may put into the Malay islands, from taking on board any seamen of that nation, except in the greatest distress, and then on no account to exceed two or three.

" It is nothing uncommon for a handful of these horrid savages suddenly to embark, attack a vessel by surprise, poignard in hand, massacre the people, and make

[5] Outlines of the Globe. London, 1800, 4 vol. 4to. iii. 33.

themselves

themselves masters of her. Malay barks, with 25 or 30 men, have been known to board European ships of 30 or 40 guns, in order to take possession of them, and murder with their poignards great part of the crew. The Malay history is full of such enterprises, which mark the desperate ferocity of these barbarians.

" The Malays who are not slaves go always armed; they would think themselves disgraced if they went abroad without their poignards, which they call *Crit;* the industry of this nation even surpasses itself in the fabric of this destructive weapon.

" As their lives are a perpetual round of agitation and tumult they could never endure the long flowing habits which prevail among the other Asiatics. The habits of the Malays are exactly adapted to their shapes, and loaded with a multitude of buttons, which fasten them close to their bodies in every part. I relate these seemingly trifling observations in order to prove that in climates the most opposite the same laws produce similar manners, customs, and prejudices: their effect is the same too with respect to agriculture.

" The lands possessed by the Malays are in general of a superior quality; nature seems to have taken pleasure in there assembling her most favourite productions. They have not only those to be found in the territories of Siam, but a variety of others. The country is covered with odoriferous woods, such as the eagle, or aloes wood, the sandal, and the *Cassia odorata*, a species of cinnamon; you there breathe an air impregnated with the odours of innumerable flowers of the greatest fragrance, of which there is a perpetual succession the year round, the sweet flavour of which captivates the soul, and inspires the most voluptuous sensations. No traveller wandering over the plains of Malacca but feels himself strongly impelled to wish his residence fixed in a place so luxuriant in allurements, where nature triumphs without the assistance of art. ..... In the midst of all this luxuriance of nature the Malay is miserable; the culture of the lands, abandoned to slaves, is fallen into contempt. These wretched labourers, dragged incessantly from their rustic employments by their restless masters, who delight in war and maritime enterprises, have rarely time, and never resolution to give the necessary attention to the labouring of their grounds; their lands in gegeral remain uncultivated, and produce no kind of grain for the subsistence of the inhabitants."

The reader who wishes for more ample information concerning this peninsula may be referred to the voyages of Nieuhof and Hamilton. As the latter asserts that the inland inhabitants, whom he calls the Monocaboes, are a different race from the Malays, and of much lighter complexion, it would seem probable that the Malays passed into this country from the north or south, and there is no small difficulty in accounting for their origin. The language should be skilfully collated with those of the neighbouring countries, and even with the ancient dialects of Hindostan, as perhaps they may be found to be the same with the Pallis, traditionally said to have been the most early inhabitants of that celebrated country.

All the accounts of Malacca being extremely defective, the author was anxious to remove this reproach from oriental geography. The work of Valentyn, though somewhat ancient, contains the most ample description of this interesting country which has yet appeared; and a translation has been obtained from a Dutch gentleman, of which the most essential parts shall be laid before the reader in their original arrangement *. It is to be regretted that Valentyn's compilation is more replete with civil than with natural history, and that his prolix details concerning Dutch captains, and preachers of the

* Valentyn's Description of the Dutch Settlements in the East Indies, Dort. 1726, 8 volumes folio; vol. vii. p. 308.

gospel, supplant information that would have been more generally interesting; but these parts are of course omitted or abbreviated.

Chap. 1. *Description of the Town of Malacca.*

The town of Malacca is in 2° 20′ N. lat. and long. from Ferro 122° 20′. It is situated on what is called the Malay coast, about eight leagues from the opposite island of Sumatra. It is built partly upon a hill, partly on level ground, which is low, wet, and unhealthy.

The circumference of the town is about eighteen hundred paces, or a Dutch mile. Towards the sea there is a strong wall, about six hundred paces in length; and another by the side of the river. On the N. E. there is a bastion called that of St. Domingo, and there was formerly a redoubt called St. Iago. These and the other fortifications, erected by the Portuguese, were considerably decayed in the time of Valentyn.

The house of the Jesuits was on the neighbouring hills; but the country in general is so flat that the sea-shore is dry to the distance of two musquet-shot at low water, and the bottom being soft and muddy, the shore is of difficult approach.

The jurisdiction of the town is about thirty miles in length, and from eight to ten in breadth. There are two small isles, one within cannon-shot called *Ilha das Naos*, the other named *Ilha das Pedras* is somewhat more distant. Both supply clay for bricks, and the Portuguese vessels used to anchor between these islets in a depth of four or five fathoms.

The north-west side of the town is slightly fortified, there being a river which is salt on the flowing of the tide. This stream is rapid, and about forty paces in width. It is called Crysorant; and on the east side of the town is another river *. Over the Crysorant there is a wooden bridge, and the country in that direction is high and agreeable, but towards the S. E. it is marshy.

The town presents many broad and straight streets, but without pavement; and the houses of brick remained strong though built by the Portuguese. The general shape is that of a crescent. The central part upon the hill is detached, and has two gates being the residence of the governor. Before the Portuguese conquest Malacca was only a fishing town. It afterwards contained eleven thousand inhabitants; but in Valentyn's time had dwindled to between two and three hundred Dutch, Portuguese, and some Malays in huts at the extremities of the town, who also possessed some neat plantations in the vicinity.

The noted strait of Malacca presents great opportunities of commerce, which was maintained in a considerable degree with Bengal, Coromandel, Surat, Persia, Ceylon, Java, Sumatra, Siam, Tunquin, China, and other places. The duties on importation amounted to ten *per cent.* and three *per cent.* was paid on goods exported. In 1669, the amount of the duties was seventy-four thousand nine hundred and fifty-nine florins, and the vessels from Java were one hundred and sixteen, not to mention

* Probably the Pahaung of Hamilton, but the description is not very clear. A map of Malacca and Sumatra is given in the same volume on a large scale, but the names of the rivers are omitted. It would appear that the river on the N. of the town is the Crysorant; and that on the S., which is the more considerable, the Pahaung.

the

the Danish, Portuguese, and Moorish ships. It was a convenient station for the Dutch vessels passing through the strait from Japan to Hindostan, and some chose this route to Batavia. But provisions are scarce, except fish and a few fruits.

The woods around the town are infested with wild beasts, especially tigers; and the elephants are very numerous. A tiger pursuing a deer across the river, was seized by a crocodile, while his intended prey escaped.

The Malays, inhabitants of this country, are the most ingenious, sagacious, and polished people of all the East Indies. Their complexion is lighter than that of the other races, and they are more cleanly in their mode of living. Their language is used throughout the east to the confines of Persia; and without it education is deemed imperfect. The Malays also study the Arabic and the Persian, but their language is no where so pure as in this country, though the genteeler class, especially the princes, courtiers and priests, affect to mingle Arabic expressions. There are numerous works written in that language, and even some of their historical ballads, or songs on national traditions. They are in general of a gay disposition, but cautious, sagacious, and proud, so that it is necessary to be on one's guard as with the Macassars. The male attire consists of pantaloons, with a wide robe of blue, red, or green; the neck is bare, but the head is covered with a turban. The female dress is the general one of the East Indies, being a long narrow petticoat, reaching from the breast to the feet, while the other parts are naked, and the hair is commonly tied. The women are superior in intelligence to most others in the east, whence their conversation is sensible and agreeable. The other inhabitants are Portuguese, Moors, and Chinese, with some from Bengal and Guzerat.

The chief articles of commerce are azelwood and camphor from the kingdom of Pahang, tin, gold, pepper, *pedra de porco*, ivory. The manufactures are various articles of dress, worn here and in Hindostan, cottons, chintz, &c.; and some articles of copper.

The governor is appointed by the Dutch East India company; the expences of the garrison and provisions were very high, sometimes about two hundred thousand florins, thus greatly exceeding the amount of the duties. Since the year 1664, the fortifications and garrison were diminished, so that about forty thousand florins were annually saved.

Under the controul of the governor of Malacca there are several factories, some of them in the peninsula, others on the east coast of Sumatra; the directors being appointed by the governor and council. These factories are styled of Peirah, Keedah, Œdjang-Salang, and Andragiri.

The first factory, that of Peirah, on the Malay coast, was in the dominions of the queen of Atsjien, and was only kept for the tin trade, that article being exchanged for money or cloths at fifty rix dollars the *bahar;* the natives, a dirty and cruel race, murdered all the Dutch in 1651, and the factory was abandoned.

The second factory, that of Keedah, or Queda, is on the same coast, nearly opposite to Atsjien in Sumatra; its object being to trade with the petty king of Keedah for tin, gold, and ivory. The third factory, that of Oedjang-Salang, was in an island so called, where the Dutch traded for tin and ivory. The fourth, that of Andragiri, was on the coast of Sumatra, the objects pepper and gold. The Dutch also traded with Ligor and Tanaserim, in the dominions of Siam, for tin; and with Bangkoelo for gold and *pedra de porco*, before the English established themselves there. The island Dinding was also considered as a dependence of Malacca.

CHAP. 2. *Ancient History of Malacca.*

Valentyn informs us, that having fortunately met with some Malay manuscripts, written in the Arabian character, he is enabled to give some account of the ancient history of this country. These books are called *Tadjoe Essatina*, or *Macota Segalla Radja;* that is, The Crown of Kings; *Misa Gomitar* and *Kitab Hantoewa*, or *Hanghtoeha*, that is, the Book of Hantoewa, commonly called the *Soelalet Essalathina*, signifying the Genealogical Register of the Kings (of the Malays); all esteemed among the first productions in the language, but being only found in the possession of the princes and priests, they are rarely to be procured. The last of these three manuscripts is preferred by our author, as it aspires to develope the very origins of Malay history, but the author of the Hanghtoeha is unknown. Valentyn, however, adds, that it is one of the best books in the Malay language which he had ever perused, and he has selected it as his chief authority.

It would appear, according to this account, that the Malays were first established on the eastern coast of Sumatra, in the kingdom of Palambang, opposite to the isle of Banka, at the river Malajoe, which encircles the mountain Mahameirae, and afterwards joins the river Tatang. Some suppose that the river derives its name from the Malays, and that they are so called from a word, signifying industrious and quick *, but Valentyn rather thinks they derived their name from the river, and communicated it to their present peninsula, which formerly belonged to the king of Siam, and was inhabited by fishermen. The learned reader will observe, that these traditions rest on recent manuscripts, and only seem to indicate that the Malays came from the west.

The same traditions bear that, during their residence in Sumatra, they chose a king called Siri Toeri Bowana, who reigned forty-eight years, and pretended to be a descendant of Alexander the Great. This happened about the Christian year 1160. During this reign the Malays proceeded to the opposite coast, and settled on the *north-east* corner, whence they gradually spread, and the country assumed the name Tanah Malajoe, or Malay-land, extending from 2 to 11 degrees N. lat. though the inhabitants of the town and district of Malacca are peculiarly styled *Orang* Malajoe, that is, simply the Malays, whilst all the other nations are called with the addition of the name of the place where they dwell; for instance, Malajoe Djochor, Malajoe Patani, &c.; that is, the Malays of Djochor, the Malays of Patani, &c.

After a residence of some years, the Malays built their first town Singapoera, which gave its name to the southern strait. About the same period the king of Madjapahit, in the isle of Java, was one of the most powerful princes in the east, being not only sovereign of that island, but having possessions in Sumatra and other isles, though his title was, as not unusual, derived from his capital city. But this conqueror attacked the Malays without success, and his ambition only imparted more energy to their counsel.

The first king was succeeded, A.D. 1208, by Padoeka Pikaram Wira, who reigned only fifteen years, having vigorously defended his town and territory against the powerful king of Madjapahit. In 1223, he was followed by Siri Rema Wikaram, who died suddenly, in 1236; the next was Siri Maha Radja, who enlarged his capital Singapoera, and died in 1249.

* I cannot find such a word in Dr. Howison's Malay Dictionary, 1800, 4to. an interesting work, especially since our settlement at Pulo Pinang, or Prince of Wales's Island, on the Malay coast. But Pinang is the name, as Pulo only signifies an island; and to introduce new names into such countries, as if among savages, can only be called an ignorant and puerile affectation, as if a Chinese were to give new names to Jersey and Guernsey.

Siri Iskender Shah was the last king of Singapoera, having been constrained by the arms of a king of Madjapahit to retire further to the north, where, in the year 1253, he built a new capital, which he called Malacca, from the name of a tree, the Mirabolan, under which he had taken shelter while hunting, as minutely detailed in the book Hantoewa. After having established salutary laws and regulations, he died in the year 1274.

From the adoption of the words, Shah and Sultan, it would appear that Mahometanism was now introduced.

The successor Sultan Magat reigned only two years; and was followed by Sultan Mohamed Shah. This great prince reigned fifty-seven years, and is esteemed the first Mahometan sovereign. He extended the name of the Malays over the isles of Lingga and Bintam, or Bintang; and farther among the people of Djochor, Patani, Keidah, Peirah, and others even on the coast of Sumatra, in Gampar and Haroe. Marrying the princess of Aracan, that kingdom fell to him by inheritance, and he abandoned it to his chancellor. Sultan Mohamed died in 1333; and was succeeded by his son Sultan Aboe Shahid, who was stabbed in the second year of his reign by the king of Aracan.

Sultan Modofar Shah reigned forty years, and is celebrated for his code of laws. About 1340, a powerful prince reigned in Siam, called Boebatnja, who became jealous of the prosperity of Malacca, and ordered an army to advance against it, but the battle was in favour of the Malays. A succeeding king of Siam was equally unfortunate, and the commercial town of Malacca was regarded, with Madjapahit and Pasi, as the third celebrated city in these regions.

Modofar died in 1374, and was followed by his son, who was at first called Sultan Abdul; but when he ascended the throne, he assumed the name of Sultan Mantsoer Shah. The reign of this prince was of extraordinary length, being seventy-three years. The kingdom of Andrigiri, on the east side of Sumatra, formerly subject to the kings of Madjapahit, was annexed to Malacca, in consequence of a marriage between Sultan Mantsoer and Radin Gala Tijindra Kiraan, daughter of the king of Madjapahit, who was about this time, 1380, so powerful that he might have been styled emperor; and among the subject princes were the king of Daha, and the king of Tandjong Poera, who married one of his daughters, Nasa Casoema, and became his successor in the empire. Sultan Mantsoer made a treaty with the emperor of China, and married his daughter, probably after the death of his former wife, in consequence of which alliance he subdued the kingdom of Pahang. At this time Malacca was esteemed the chief city, Pasi the second, and Haroe the third, in these parts of the eastern world; but the king of Pasi became subject to Malacca.

Krain Samarloeka, king of Macassar, sailed with a large fleet of two hundred vessels, in the year 1420, to attack Malacca, but the Locsamana, or admiral of Mantsoer, repulsed him, so that he was obliged to retreat to Pasi, in the north of Sumatra. Mantsoer died in 1447.

His son and successor, Alawoddin, was the eleventh king of the Malays, the sixth of Malacca, and the fifth, who professed the Mahometan religion. After an inglorious reign of thirty years, during which Malacca became subject to Siam, he died in 1477, and was succeeded by Sultan Mahmud Shah, who reigned thirty-six years, twenty-nine in Malacca, and seven in Johor. During this reign, in the year 1509, the Malays threw off the yoke of Siam, but this effort was soon followed by the Portuguese conquest.

Chap. 3. *The Portuguese in Malacca.*

Sultan Mahmud Shah reigned thirty-two years when the Portuguese arrived, king Emanuel having, in 1508, ordered a fleet of sixteen ships to the East Indies under Siqueira. The kingdom of Malacca had been weakened by its subjection to Siam, and the prince granted leave to trade, though the Moors opposed it as contrary to the interest of the Mahometans in Egypt. But at their instigations the king was prevailed on to form a plot, for the assassination of Siqueira and his officers, which was detected. Among these officers we find the name of Magalhaens, or Magellan, who afterwards became the first circumnavigator of the world. Another scheme of assassination having failed, and Sequeira finding an arrangement impossible, he returned to Portugal. The great Albuquerque was now the Portuguese viceroy in the East Indies. On the first of August 2511, he arrived before Malacca with a powerful fleet, while the king of Pahang was in the town to celebrate his nuptials with the daughter of Mahmud. A triumphal car, upon thirty wheels, was to convey the two kings to the solemnity, the very day that Albuquerque cast anchor before the city. Valentyn informs us, probably from Maffei, whom he quotes on another occasion, that there were not less than nine thousand brass cannon in the town, a circumstance utterly incredible, and especially at that early period of the use of artillery, even if we suppose the invention to have passed from China to Malacca, as the Chinese had long been settled in that city. Malacca was, however, taken by storm; and the king fled to Johor, where he founded a new town and kingdom. The Portuguese, in complete possession of Malacca, formed an alliance with Siam; while the king of Johor died in 1515, and was followed by his son Sultan Ahmed Shah, who afterwards made a treaty with the Portuguese. The succeeding events need not be mentioned, as they are sufficiently known in the Portuguese annals.

Chap. 4. *Other events.*

In this chapter Valentyn proceeds to detail the Portuguese history of Malacca, the repeated attempts of the king of Johor to retake the city, till his death in 1540, when he was succeeded by Sultan Alawoddin Shah. Among the Portuguese governors of Malacca was Peter Mascarenhas, 1526, from whom, perhaps, was derived the name anciently given to the isle of Bourbon. It would be of little importance to enlarge on the events of the little kingdom of Johor. Alawoddin was succeeded, 1559, by Abduldjaliel, who was followed, 1591, by another Alawoddin; during whose reign the Dutch arrived, and formed an alliance with this prince against the Portuguese. In 1606, the Dutch attacked Malacca, in conjunction with the king of Johor; but our author is so extremely prolix in every particular relative to the Dutch affairs, that it is unnecessary to follow him. The sea-fights, however, between the Dutch and Portuguese interest, from their equipoise and fluctuation. It appears, from the list given, that no Portuguese ship of war was of more than eleven hundred tons, while the Dutch did not exceed eight hundred; and the fleets were only of seven or eight ships.

Chap. 5. *The Dutch in Johor.*

The sea engagements continued without decisive success; and the Dutch were obliged to content themselves with a factory in Johor, where Abdalla had become king, in 1610, and was succeeded, in 1621, by Mahmud. In 1623 and 1627 various attempts were made to subdue Malacca, which was vigorously defended by the Portuguese, who were, however, destined to lose this valuable settlement in the year that they freed themselves from the Spanish yoke.

CHAP. 6. *The Dutch in Malacca.*

The celebrated governor-general of the Dutch settlements in the East Indies, Antony Van Diemen, finding the opportunity favourable for the conquest of this settlement, sent, in the beginning of June 1640, twelve ships and six sloops to blockade Malacca, which were joined by about twenty small vessels off Johor. On the second of August the Dutch landed on the north side of the city, and erected a battery. The siege became very severe, and was accompanied, as sometimes happens, with famine and pestilence. In January 1641, the famine became extreme, and the women and children were expelled. Many of the Dutch officers, among whom was the commander in chief, died of heat and fatigue. Impatience and desperation produced a general assault, which was executed on the fourteenth of January. All the effective men, soldiers and sailors, not exceeding six hundred and fifty in all, were formed in three columns, who attacked in three different points; and one having entered, the governor capitulated. The town was not sacked, but the chief moveables were brought to the conquerors. Thus the Portuguese, after a possession of nearly a hundred and thirty years, lost this valuable settlement, then esteemed, after Goa, the richest in the East Indies. The town was fortified with sixty-four cannon of brass, and four of iron, a number which may be compared with the nine thousand found by the Portuguese, and which good sense might reduce to ninety. The judicious reader will apply this scale to most of the Portuguese and Spanish relations of the first discoverers in Asia and America: their imaginations, inflamed with novelty and swelled with vanity, having no check on that disposition to hyperbole, so justly imputed to travellers in distant countries, before the spirit of criticism, and the exactness of modern knowledge, began to dissipate those enchantments. The travels of Mendez de Pinto appeared a century too late, and only excited universal ridicule; while, if they had appeared in the preceding century, they would have been received into history, and might long have misled the opinions even of the more enlightened part of mankind.

Valentyn reports that, during the siege, more than seven thousand died in the town, and a still greater number found means to escape; so that of twenty thousand reputed inhabitants not more than three thousand were found. The Dutch lost about fifteen hundred, chiefly by the plague, which continued some months after the place was taken. Yet, towards the end of the year, several valuable cargoes were sent to Batavia and Holland.

In the seventh chapter Valentyn continues a prolix detail of the succession of Dutch governors, and other minute events, by no means interesting to the general reader. The eighth and last chapter contains the history of religion, and an exact succession of the Dutch clergymen in Malacca. It is to be regretted that this valuable and expensive work had not rather been restricted to the geography and natural history, than enlarged with minute details rarely interesting even to his countrymen themselves; but, as it contains many valuable materials no where else to be found, a judicious abstract would be highly acceptable. Meanwhile it is to be hoped that this addition to the account of Malacca will be found interesting, not only on account of its importance to geography, as illustrating a country very little known, but as a specimen of a publication much celebrated but rarely perused.

ANDAMAN ISLES.] Opposite to the coast of Malacca, though at a considerable distance, are the islands of Andaman and of Nicobar. The great Andaman is about 140 British miles in length, but not more than 20 in the greatest breadth, indented by deep bays affording excellent harbours, and intersected by vast inlets and creeks,

one of which, navigable for small vessels, passes quite through the isle [6]. The soil is chiefly black mould, the cliffs of a white arenacious stone. The extensive forests afford some precious trees, as ebony and the *mellori*, or Nicobar bread fruit. The only quadrupeds seem to be wild hogs, monkies, and rats. The sea supplies numerous fish, among which are mullets, soles, and excellent oysters. The people of the Andamans are as little civilized as any in the world, and are probably cannibals, having at least a particular antipathy against strangers. They have woolly heads, and perfectly resemble negroes; being as some report descended from a crew of African slaves; but they are mentioned in the ninth century by the Mahometan travellers with all their peculiarities, and it is difficult to conceive how a cargo of slaves could at an early period be steered in that direction. The S.W. monsoon may have driven their canoes from the coasts of Africa; and, opposed in civilized parts, they may have seized this desert isle *. Their character is truly brutal, insidious, and ferocious, and their canoes of the rudest kind. On Barren isle, about 15 leagues to the east of the Andamans, is a violent volcano which emits showers of red hot stones; and the whole island has a singular and volcanic appearance. A British settlement has been recently formed on the Greater Andaman, and some convicts sent thither from Bengal. The natives, about 2000, have already profited by the example of English industry.

NICOBAR.] The Nicobars are three; the largest being about five leagues in circumference [7]. They produce cocoa and areca trees, with yams and sweet potatoes; and the eatable bird's nests, so highly esteemed in China, abound here as well as in the Andamans. The people are of a copper colour, with small oblique eyes and other Tatar features. In manners they are also the reverse of the savages of Andaman, being civil and fond of strangers. In their dress a small stripe of cloth hangs down behind; and hence the ignorant tales of seamen, which led even Linnæus to infer, that some kinds of men had tails. The only quadrupeds are swine and dogs. The traffic is in cocoa nuts, of which one hundred are given for a yard of blue cloth. The tree called by the natives Larum, by the Portuguese Mellori, produces an excellent bread fruit, different from the kind found in the interior parts of Africa, and also from that of Otaheite. The fruit is said to weigh 20 or 30 pounds; and some plants have been brought to the botanical garden of the East India Company near Calcutta.

[6] As. Res. iv. 385. According to Hamilton, ii. 68, Edin. 1727, 8vo., some of the Andaman isles abound in quicksilver.

* They are, after all, probably of the same race with the other negroes of the Asiatic Isles, which see.

[7] As. Res. iii. 149.

SIAM.

CHAPTER I.

HISTORICAL GEOGRAPHY.

Name. — Extent. — Boundaries. — Original Population. — Progressive Geography. — Historical Epochs.

TILL the recent extension of the Birman empire, the rich and flourishing monarchy of Siam was to be regarded as the chief state of exterior India. The brief connection established with France, towards the end of the seventeenth century, excited many writers to give accounts of this kingdom, while only an imperfect knowledge was diffused concerning the surrounding states. Those of the Jesuits are deservedly disesteemed, when compared with that of La Loubere, himself envoy extraordinary from Louis XIV. to the Siamese court, which remains the chief guide concerning this state, though capable of occasional improvements from more recent information on particular topics *.

NAME.] The name of this celebrated country is of uncertain origin, and in appearance first delivered by the Portuguese, in whose orthography Siam and Siaõ are the same, so that Sian, or Siang, might be preferable to Siam [1]; and the Portuguese writers in Latin call the natives *Siones*. The Siamese style themselves *Tai*, or freemen; and their country *Meuang Tai*, or the kingdom of freemen. It is probable that the Portuguese derived the name Siam from intercourse with the Peguese †.

EXTENT AND BOUNDARIES.] The extent of the Siamese dominions has been recently restricted by the encroachments of the Birmans, nor can some of the limits be accurately defined. On the west of the Malaian peninsula a few possessions may remain, to the south of Tanaserim; and on the eastern side of that Chersonese Ligor may mark the boundary. On the west a chain of mountains seems to divide Siam, as formerly, from Pegu, — but the northern province of Yunshan would appear to be in the hands of the Birmans, who here seem to extend to the river Maykang; and perhaps the limits may be a small ridge running E. and W. above the river Anan. To the south and east the ancient boundaries are fixed; the ocean, and a chain of mountains dividing Siam from Laos and Cambodia. Thus the ancient idea may be retained, that this kingdom is a large vale between two ridges of mountains.

* The latest account of this interesting country is that published in Paris, 1771, by M. Turpin, from the Papers of Brigot, bishop of Tabraca, whence it is cited as the work of the latter.

[1] Loubere, i. 16. edit. Amst. 1714. See also Turpin, i. 2. Paris, 1771. 8vo.

† *Shan* is the oriental term, as appears from several papers in the Asiatic Researches.

The northern boundaries, as defined by Loubere, evince that Siam has lost little in that quarter. His city Chiamai is probably Zamee; and was fifteen days' journey beyond the Siamese frontier. But when he marks the northern limit at 22°, there is an error in latitude. It is about the ninteenth degree; so that the length of the kingdom may be about ten degrees, or near 700 British miles; but of this about one half is not above 70 miles in medial breadth. A more adequate admeasurement may be estimated from about 11° of N. lat. to 19°; a length of about 550 British miles, by the breadth of 240.

This kingdom is divided into ten provinces, Supthia, Bancok, Porcelon Pipli, Camphine, Rappri, Tanaserim, Ligor, Cambouri and Concacema, which have each a particular governor.

Bancok is situated about seven leagues from the sea, and is called Fou, in the Siamese language. The environs are embellished with delicious gardens furnishing the natives with fruit, their chief nourishment.

Tanaserim is a province abounding in rice and fruit trees. It enjoys a safe and commodious harbour where arrive vessels of all nations, and the people find more resources of subsistence than in the other parts of the monarchy.

The province of Cambouri which is situated on the frontiers of Pegu carries on a considerable trade in what the French call eagle wood, elephants' teeth, and horns of the rhinoceros. It is also from this province that the finest varnish is procured.

Ligor affords a kind of tin, called by the French calain, the calin of the Portuguese.

Porcelon was formerly a distinct sovereignty, and produces dying woods and precious gums *.

Original Population.] The original population of Siam, and other regions of exterior India, can only be traced by affinity of languages; and the topic has been little illustrated. For this purpose the vulgar speech must be chosen, and not the Bali, or language of the learned, which is perhaps the same with the Palli, of Hindostan. If the former be monosyllabic, as Loubere says, it bears some affinity with the Chinese; and, he adds, with those of the eastern regions of exterior India. That of the Malays is very different; and perhaps they proceeded, as before mentioned, from Hindostan, while the other tribes of further India advanced by land from China and Tibet; though there may perhaps be found great difference in the dialect, from early separation in a savage state, followed by different wants and customs.

According to Turpin, who published at Paris, 1771, a new history of this country, drawn up from the papers of the missionaries, the people of Laos and Pegu have established a considerable colony in Siam, since their countries were ravaged by the Birmas. There are also many Malays, and the ancient kings had a guard of Japanese, a circumstance that gives an uncommon idea of the intercourse of oriental nations; and though we be told that the Chinese laws prohibit expatriation, the Chinese colony is the most flourishing of all.

Progressive Geography.] The progressive geography of Siam ascends to classical antiquity, if the people be, as is reasonably inferred, the Sinæ of Ptolemy. The early navigators imagined that the Chinese were the Sinæ, and that the isle of Taprobana was Sumatra! In the reign of the emperor Justinian, Cosmas, called Indicopleustes, mentions the silk of the Sinæ, as imported into Taprobana; which he also calls *Sielediva*, coinciding with *Selendib*, the oriental name of Ceylon: and when he adds that this isle was at an equal distance from the Persian gulph, and the region of the Sinæ, he affords an additional proof that the latter was Siam. This country is not indeed at present remarkable for the production of silk, the staple article of the ancient Sinæ; but it

* Turpin, i. 23.

appears

appears that the silk of the early classics was the growth of a tree, a kind of silky cotton, still abundant in Siam; and perhaps, as Malacca afterwards became famous for products not its own, so Siam, in a similar centrical position between China and Hindostan, might, in ancient times, be the mart of this and other more oriental articles. When real silk became known to the Romans, about the time of Aurelian, a pound was sold for twelve ounces of gold, a price which shews that it must have passed through repeated mercantile profits. The Persian monks, who in the sixth century, introduced the silk-worm into the Byzantine empire, perhaps proceeded to the west of China, if they did not find that valuable insect in some warm vales of Tibet *. Nor, while it is denied that the Greeks or Romans had any knowledge of China, is it meant to be inferred that the Persians were in the like predicament; the Arabian travellers of the ninth century, whose account is published by Renaudot, and is incontestibly genuine, shewing a very complete knowledge of that country.

Some faint notices concerning Siam may probably occur in the oriental geographers of the middle ages; but such enquiries are more proper for an antiquarian dissertation. Suffice it to observe that, till the Portuguese discoveries, Siam may be said to have remained unknown to Europeans. In the middle of the seventeenth century Mandelslo[2], or his translator Wicquefort, compiled a tolerable account of this country; but the French descriptions present more precision of knowledge, as well as more extent of information. By the latter was first reformed a singular error in the geography, which deduced the great rivers of Ava, Pegu, and Siam from a large inland lake called Chiamai, in lat. 30°, while Tibet is placed in lat. 40°. This gross error perhaps arose from the report that the small river of Pegu rises in a lake about lat. 21°. But on comparing the maps of Asia, in the beginning of last century, and even that of China and the East Indies, in the Amsterdam edition of Mandelslo, 1718, the reader will be sensible of the great progress of geography in recent times.

Historical Epochs.] The Siamese history is imperfect, and abounds with fables. Their epoch is derived from the pretended disparition of their god Sammona Codam (or Boodh); and the Christian year 1689 corresponded with their 2233d[3]. Yet by Loubere's account their first king began to reign in the year 1300 of their epoch, or about 756 years after the Christian era. Wars with Pegu, and occasional usurpations of the throne, constitute the hinges of Siamese history since the Portuguese discovery. In 1568 the Peguese king declared war on account of two white elephants which the Siamese refused to surrender; and after prodigious slaughter on both sides Siam became tributary to Pegu. But about 1620 Raja Hapi delivered his crown from this servitude[4]. In 1680 Phalcon, a Greek adventurer, being highly favoured by the king of Siam, opened an intercourse with France, in the view of supporting his ambitious designs; but they were punished by his decapitation in 1689, and the French connection ceased in consequence. The latter events of Siamese history may partly be traced in that of the Birman empire.

Turpin, in his second volume, has extended the history of Siam to the year 1770. Nor may it be uninteresting to recapitulate the ancient history of the country, with a few remarks, for he does not excel in the spirit of criticism. He says that the first king began to reign about 1444 years before Christ, and that he had 40 successors before the epoch of the Portuguese discovery 1546, many of whom were precipitated from their throne on account of their despotism. These forty kings therefore cannot be supposed to have reigned more than ten years each, at a medial computation, so that instead of

* If, as some ancients affirm, they brought it from the *Seres*, (not the Sinæ) Little Bucharia must be implied; but the ancient ideas were vague; and often, as in the case of Arabia and Hindostan, confounded the mart with the native country.

[2] Col. 304—331. [3] Loubere, i. 21. [4] Mandelslo, 322.

1444 years before Christ, as he supposes, the first historical date cannot ascend beyond the year 1100 after Christ. But as he says that all these kings were of different families, it is probable that he has confounded monarchs with dynasties.

The war of the white elephant, so called because it arose from the refusal of the king of Siam to yield one of these animals to the monarch of the Birmahs, ended in the subjugation of Siam; but the bishop of Tabraca gives no dates, so that his narrative is not a little confused. Repeated cruelties sully the page of Siamese history; and one of the monarchs made an ingenious apology for his own despotism.

"A Sancrat, proud of his dignity, supposed that he had a right to instruct the sovereign in his duty, and dared to represent to him, that all the nation murmured in secret at his extreme severity. The prince heard him, without appearing offended at his indiscreet zeal; but some days after sent to the house of his monitor an ape, an animal detested by the Siamese, with orders to let him have abundance of food, without any restraint or punishment. The Sancrat was obliged to suffer all the caprices of this new guest, who overturned the furniture, broke the vessels of porcelain, and bit all the domestics. At last, losing all patience, he warmly supplicated the monarch to be delivered from this domestic enemy. "What," replied the king, "you cannot suffer for two days the tricks of a little animal; and you wish that I should endure all my life the insolence of a people, a thousand times more wicked than all the apes of all our forests. Learn, that if I punish the bad, I also know how to recompence merit and virtue."

The history of Phalcon, the Greek, and the embassies to Siam, during the reign of Louis XIV., are sufficiently known; nor can praise be refused to the conduct of the Chevalier Forbin, who has given a relation of his own exploits against the furious Macassars of Celebez: and who has candidly observed that the eyes of a Jesuit must be different from those of other people, because, when he read their accounts, he found a country which he so well knew, so totally misrepresented. The infant son of the celebrated Phalcon was educated by the French missionaries; and, in 1749, was captain of a Siamese vessel, but died poor in 1754. His son was, 1770, living in obscurity at the capital of Siam *."

One of the most remarkable events, after the French had evacuated Siam, is the war against the kingdom of Cambodia, which was obliged, on this occasion, to seek the protection of Cochin-China. The Siamese army, having advanced too far into the country, was destroyed by famine, and even their fleet had little success, though it destroyed the town of Ponteamas, with 200 tons of elephants' teeth.

In 1760, a remarkable revolution happened in Siam, preceded by violent civil wars between two rival princes. According to our author, in 1754, the Birmans, or people of the kingdom of Ava, had already languished five years under the Peguese domination. They had beheld the death of their king, their queen, and the greater part of their princes. The remembrance of their past misfortunes, and the feelings of their servitude, and of their humiliation, made them incessantly sigh for a deliverer. They did not seek him among men softened by the luxury of the court, and who, proud of their titles, computed their talents by their ambition. They threw their eyes on one of their conpatriots, named Manlong, a gardener by profession, who in a body condemned to abject and painful functions, had the courage and firmness of a hero: they begged him to accept the sceptre, and to deliver them from the yoke of their tyrants. "Yes," replied this extraordinary man, "I consent to be your king; but the first step must be to prove that you are worthy to have a chief like me. I command you to cut off the heads of all the little subaltern tyrants, whom the Peguans have sent to oppress

* Turpin, ii. 178.

you."

you." They answered, that if this were the only sacrifice, he should instantly be obeyed: and after the massacre, Manlong was proclaimed king.

He began by forming a strong cavalry, and a body of fusileers, who had orders to fire upon all fugitives of their own army; a discipline, which being rigorously observed, rendered the Birmans almost invincible. About 1759, they took and completely ruined the city and port of Siriam. Having advanced to Martavan and Tavail, the new monarch heard of the riches of Siam, and conceived the design of its conquest. He dispatched thirty ships to pillage the cities of Merghi, Tanaserim; and, astonished at the terror which his name and arms inspired, was persuaded that he would subdue the whole kingdom of Siam with great facility.

Upon the tidings of this irruption, the court of Siam sent to the bishop of Tabraca to request that he would arm the Christians; who, though only amounting to 100, behaved better than the pusillanimous multitude. The Birma sovereign was at a distance of three days' march from Yuthia, the capital, when he was attacked with an abscess, which became mortal. Yet, the suburbs on the Dutch quarter were ravaged and burnt; and the surrounding country exposed to a thousand cruelties. The death of Manlong delivered the Siamese capital; the youngest of his sons having assumed the sceptre, found himself under the necessity of regaining his own kingdom, in order to stifle any revolt.

Soon after the Siamese sovereign having rashly pronounced a sentence of death against the favourite of his brother, was forced to abdicate the throne. He became a Talapoin or monk, in May 1762, and his example was followed by many nobles. Siam remained in a state of security, upon the report that the new prince of the Birmas had been dethroned upon his return to Ava; and that his elder brother, who had succeeded, had no wish to make conquests.

This tranquillity was unhappily of short duration, the pacific monarch having died suddenly, and a pretence of war being afforded by the assistance lent by the Siamese to a rebel Birman governor. On the tenth of January 1765, in the dusk of the evening, was suddenly heard along the river of Merghi, the confused noise of a multitude who filled the air with lamentations. This tumult occasioned a conjecture that the enemy was about to appear. In fact, the Birmas were only three or four leagues from the town, and a pilot had perceived ten of their vessels. Yet, the reports were various, and a momentary calm succeeded. But about four o'clock in the morning, the sound of fifty cannon-shot announced the arrival of the Birmas. Their conduct, though cruel, was not so atrocious as in the war of 1760; the French missionaries, and their Christian converts, escaped by the benignity of one of the captains; and all the married women were saved from violation.

After the capture of Merghi, a Birma general conducted the greater part of their army to Tanaserim, and that unfortunate city was reduced to ashes.

The army of the Birmas, more occupied with pillage than with a view of establishing a conquest, devoured the spoil in debauchery; and when it was exhausted, they proceeded in search of a supply*. The general, flattered with his first success, promised himself easy triumphs, and marched against Yuthia, persuaded that the conquest of the capital would give a powerful example of submission to the other cities. It was necessary to pass immense forests, and steep mountains, but these obstacles were foreseen and provided against. The provinces on the north-west of the royal city were ravaged, the inhabitants only saving themselves from death or slavery by their dispersion into forests, where they shared the food of the wild beasts. The fire which devoured the towns and villages threw terror into the capital, and the Siamese,

* Turpin, ii. 294.

threatened with speedy destruction, reunited their forces. With trepidation they marched against an enemy, whose valour they had often known and felt. They tried the fate of a battle, and fought with more ardour than usual; but their sanguinary defeat left their country in the power of their conqueror. The fields, ravaged by the consuming flames, presented nothing but ashes, and famine became then more terrible than war.

The Birmas built, at the confluence of two rivers, a town, or rather fortified station, which they called Michoug.

The Siamese, on their part, attempted to fortify the capital, and eagerly invoked the assistance of two English vessels which happened to arrive. The captain of one of them consented to defend the capital, on condition of being supplied with cannon and ammunition, but the jealous Siamese insisted that he should first lodge his merchandise in the public magazine. He consented with a smile of contempt, and after conferences with the ministers, went on board his ship, where he prepared himself to justify the confidence which had been placed in his courage*. He ordered descents, which were all destructive to the enemy; their forts were destroyed before they were completed, and every day was marked by their defeat or their flight. But, demanding more ammunition, the dastardly court became afraid, that the English captain, with his single ship, would conquer this ancient monarchy. The English captain, disgusted with the refusal withdrew, after seizing six Chinese vessels, whose officers received from him orders upon the king of Siam, to the amount of the merchandise, which had been lodged in the public treasury.

Upon his retreat, the Birmas finding no opposition, spread universal desolation, and even the temples were delivered to the flames. The superstitious monarch and his ministers placed all their confidence in their magicians. Even the officers and the soldiers, instead of military exercises, were solely occupied in the study of charms, supposed to render the wearers invisible. Their courage was indeed invisible, while their persons were exposed, without defence, to a less credulous enemy, who knew that in war valour is the only magic. A Siamese prince, who had been banished to Ceylon, found means to raise a little army, and return to the assistance of his country; and the distracted court of Siam actually sent forces to oppose this deliverer. This imprudence so much irritated the Siamese, that many of them joined the Birmas, who, in the month of March 1766, again advanced to within two leagues of the capital, having been before repulsed by the English captain, the war being depredatory, and without any regular plan. The temples, built of brick, and surrounded with ditches, did not suffer so much from the flames, as the Christian churches which were constructed of wood.

These events have been narrated at considerable length, as being little known to English readers, and interesting to the history and security of our oriental possessions. This apology will also be accepted for the remainder of the details concerning the capture of the Siamese capital, and even not a little important in the annals of Asia.

On the 7th of September 1766, the Birmas seized on a high tower, a little more than a quarter of a mile from the city, and raised a battery of cannon, which rendered them absolute masters of the river. The danger becoming urgent, six thousand Chinese were charged with the defence of the Dutch factory, and of a large temple adjacent. After some skirmishes, the Birmas made an assault, and seized on five considerable temples, which they changed into fortresses, opening a heavy cannonade. Yet, in another assault, on the 8th of December, they were obliged to retire. The Siamese officers, in their eagerness to secure the magazines of grain, as, a future resource, produced an immediate famine. The streets and squares were filled with dead

* Turpin, 301.

bodies;

bodies; and a contagious disorder or pestilence completed the horrid scene. During six months the dead bodies in the street were devoured by hungry dogs, and even the walls began to be deserted, the centinels descending by means of long cords, in expectation of finding more mercy from the enemy than from their own officers, or at least a speedy death, more agreeable than the horrors of a lingering dissolution, which every where met their eyes. The Dutch factory was in vain defended by the Portuguese and the Chinese: and after a special siege of eight days was taken and reduced to ashes. The whole Christan quarter of the city shared the like fate; and the virgins were obliged to marry the first young men that presented themselves, in order to be protected by the matrimonial tie which the Birmas reverence.

After an ineffectual negociation, in which the Birmas insisted upon an unconditional surrender, the city was at length taken by assault on the 28th April 1767. The wealth of the palaces and temples was consumed by the flames, or abandoned to the soldiery. The golden idols were melted, and the victors were astonished to find that their avarice had been sacrificed to their fury. Scenes of violation and cruelty followed their disappointment. The great officers of the kingdom were loaden with irons, and condemned to the gallies. In a vain attempt to escape, the king was massacred at the gate of his palace. Nothing being left to destroy, the victorious army resumed its march to Pegu, accompanied, among other captives, with the remaining princes and princesses of the royal blood of Siam.

The Christians and the missionaries fled by sea to the port of Kancoa, in Cochin-China. On the 6th of June, the Birmas quitted Siam, after having burnt the town of Michoug, a short time after its construction. The bishop of Tabraca arrived in France the 30th of October 1769, and retired to the seminary of foreign missions.

After the Birmas had thus evacuated their conquest, the Siamese issued from their forests, and their first rage was directed against their gods, whom they accused of being idle and negligent of their duties, when they had thus abandoned them to a destructive enemy. Several of the statues which remained were known by the natives to be full of gold and silver, placed there by superstitious persons in a certainty of finding them should they revisit this world. Having thus restored some degree of wealth to their country, they proceeded to elect a leader; and the unanimous choice fell upon Phaia-Thaë, an officer of acknowledged ability. This new prince displayed considerable clemency and talents; and in the year 1768, suppressed a rebellion which was instigated against him. The Birmas in vain attempted to repeat their incursions into the Siamese territory. They were repelled, and afterwards forced to turn their arms against the Chinese, who were defeated in their turn.

The remainder of the Siamese recent history becoming incorporated with that of the Birman empire may be compared with the present abstract; the political situation of these two countries being not a little connected with our possessions in Hindostan.

CHAPTER II.

POLITICAL GEOGRAPHY.

Religion. — Government. — Laws. — Population. — Army. — Navy. — Revenues. — Political Importance and Relations.

RELIGION.] THE religion of the Siamese, like that of the Birmans, resembles that of the Hindoos; and the transmigration of souls forms an essential part of the doctrine. Sommona Codam, mentioned by Loubere as the chief idol of Siam, is interpreted by competent judges to be the same with the Boodh of Hindostan[1]. The sacred language called Bali is of the same origin; and Loubere has published a translation of a Siamese legend in that tongue. The most esteemed book seems the Vinac; and the precepts of morality are chiefly five. 1. Not to kill. 2. Not to steal. 3. Not to commit uncleanness. 4. Not to lie. 5. Not to drink any intoxicating liquor[2]. Compared with the precepts of Moses, those against idols are of course unknown, nor is any particular day of the week declared sacred. Vain swearing and false testimony are also omitted; nor is there any command to pay due respect to parents, or to avoid covetousness. But in the universal code of morality murder and and theft are esteemed pre-eminent crimes; the first being irreparable. Loubere has also given a translation of a more minute code of morals, chiefly compiled for the use of the persons dedicated to religion, whom he names Talapoins.

In the Birman empire the high priest is called the Seredaw, while the term for an inferior priest is Rhahan. Loubere has entered into considerable details concerning the priests and monks of Siam, whom he calls Talapoins, though he adds that the native term is Tchaoucou *; and he does not explain the probably Dutch appellation of Talapoin, though he informs us that the convents are named Vat, and the temples Pihan; while the Portuguese style them and the idols *Pagods*, as that author conceives, from the Persian *Poutgheda*, meaning an idol-temple.

The Siamese imitate the Chinese in their festival of the dead; and in some other rites of that singular nation.

GOVERNMENT.] The government of Siam is despotic; and the sovereign, as among the Birmans, revered with honours almost divine. The succession to the crown is hereditary in the male line. Loubere adds that a council was generally held twice a day, about ten o'clock in the morning, and at the same hour in the evening, when suits were discussed, and affairs of state deliberated. It may be conceived that the king was not always present. Sometimes he consults the Sancras, or superior Talapoins, and sometimes the governors of provinces.

LAWS.] The laws are represented by all writers on this country as extremely severe, death or mutilation being punishments even of unimportant offences.

POPULATION.] Concerning the population of Siam there are no adequate documents. If the Birman empire contain, as is asserted, more than fourteen millions, it

[1] Symes, ii. 319. [2] Loubere, i. 381.

* Kæmpfer, i. 62, says the young monks are styled Dsiaunces, and the old Dsiaukus: the nuns Nanktsiji.

might perhaps be reasonable to conclude that the Siamese dominions may be peopled by about eight millions. Yet Loubere assures us, that from actual enumeration, there were only found of men, women, and children, one million nine hundred thousand[3]. So uncertain are the computations in oriental countries!

ARMY.] Loubere says that in his time, there was no army, except a few royal guards but Mandelslo estimated the army, which may be occasionally raised, at 60,000, with not less than 3000 or 4000 elephants. The manner of raising this army resembles that already described, as practised in the Birman empire.

NAVY.] The navy is composed of a number of vessels of various sizes, some of which are richly decorated. Hence, as in the Birman history, naval engagements are not uncommon; and the large rivers of exterior India are often reddened with human gore. The form of the Birman and Siamese vessels may be better learned from the plates, in the works of Col. Symes and Loubere, than from the most elaborate description. They frequently display a singular fantastic elegance.

REVENUES.] The revenues of this sovereignty are of uncertain computation. They are described by Mandelslo as arising from the third of all inheritances, from trade conducted by royal agents, annual presents from the governors of provinces, duties imposed on commerce, and the discovery of gold, which by this account seems a regal claim. Loubere adds a kind of land tax; and other particulars, among which is the royal domain[4]. Tin is also a royal metal, except that found in Jonkseylon, a remote isle on the Malaian coast, which is abandoned to the adventurers. There is a royal treasury, as in most other eastern states, but voyagers have not attempted to define its probable amount. Loubere says it was reported as an extraordinary affair, that the king had increased his revenue by about 42,000l. sterling: supposing this a fifth part of the whole, the opulence of this monarch must chiefly arise from the national poverty, which renders money valuable when compared with commodities.

POLITICAL IMPORTANCE AND RELATIONS.] Siam appeared of considerable political importance to the French in the reign of Louis XIV, who aspired to form lasting settlements, and render it a mart of Indian commerce, and a source of great opulence to themselves. Were the Birmans to become dangerous to our possessions in Bengal, a firm alliance with Siam might be highly serviceable; and the like policy is adapted to the Chinese empire, if that great state ever formed alliances. In a merely commercial point of view, as it may be difficult to preserve the friendship both of the Birmans and the Siamese, it is a matter of calculation from which state superior advantages may be derived. If directed by European policy, Siam would form strict alliances with the more eastern states of exterior India, as a common defence against the growing preponderance of the Birmans.

[3] Loubere, i 30. The work of Turpin, is singularly deficient with regard to the population, revenues, and other political objects.

[4] Loubere, i. 284.

CHAPTER III.

CIVIL GEOGRAPHY.

Manners. — Language. — Literature. — Cities. — Edifices. — Manufactures. — Commerce.

MANNERS AND CUSTOMS.] THERE is a considerable similitude in the manners and customs of all the states between the vast countries of China and Hindostan; with shades of difference, as they approximate to either of these *foci* of civilization. Siam, though centrical, has embraced a branch of Hindoo faith, and the manners are rather Hindostanic than Chinese.

Loubere has given an ample and interesting account of Siamese manners. The fair sex are under few restraints, and are married at an early age, being past parturition at forty. The espousals are concluded by female mediation; and as wealth is carefully concealed, from dread of extortion by the magistrate or prince, a priest or magician is consulted concerning the propriety of the alliance. On the third visit the parties are considered as wedded, after the exchange of a few presents, and without any further ceremony civil or sacred. Polygamy is allowed: but is rather practised from ostentation than any other motive, and one wife is always acknowledged as supreme. From pride the royal marriages are sometimes incestuous, and the king does not hesitate to espouse his own sister. Divorce is seldom practised, as mutual necessities and habits perpetuate the union of the poor; and the rich may choose a more compliant wife without dismissing the former. A temporary amorous intercourse is rather forbidden by the pride of the sex, than by any moral or legal considerations, being regarded as a brief marriage, and inconstancy as a divorce. Few women become nuns till they are advanced in years.

According to the same excellent author the Siamese funerals considerably resemble those of the Chinese [1]. The body is inclosed in a wooden bier or varnished coffin; and the monks called Talapoins, (perhaps from the *talapan*, or peculiar umbrella,) sing hymns in the Bali tongue. After a solemn procession the body is burnt on a funeral pile of precious woods, erected near some temple; and the spectacle is often rendered more magnificent by the addition of theatrical exhibitions, in which the Siamese excel. The tombs are in a pyramidal form; and those of the kings large and lofty. Mourning is not prescribed by the laws, as in China: and the poor are buried with little ceremony.

As we eat less in summer than in winter, so in general nations inhabiting warm climates are temperate in diet. The common nourishment of the Siamese consists in rice and fish, both which articles are abundant. They also eat lizards, rats, and several kinds of insects. The value of about one penny sterling sufficed to procure a poor man his daily pound of rice, with some dried fish and rack. The buffaloes yield rich milk; but butter would melt and become rancid, and cheese is unknown. Little animal food is used in Siam, mutton and beef being very bad; and while the Chinese indulge in all viands, the doctrine of Boodh rather influences the Siamese, and induces a horror at

[1] Loubere, i. 371.

the

the effusion of blood. So that Siam in this, as in other respects, forms a medial point of comparison between China and Hindostan. Yet in grand festivals the Chinese manner is sometimes adopted.

The houses are small, and constructed of bamboos upon pillars, to guard against inundations so common in this country. They are speedily destroyed and replaced; and a conflagration, if a common, is at the same time a slight calamity. Even the palaces only exceed the common habitations by occupying a more extensive space, and being constructed of timber, with a few ornaments: they are also of a greater height, but never exceed one floor. If they continue as Loubere describes them, they form a striking contrast with the splendid edifices of the Birmans; but it is probable that rivalry has produced greater pomp. Brick was however used in the construction of temples, and funeral pyramids. It is to be wished that Loubere had figured the latter as well as the former; and indeed to be regretted in general that a more intelligent voyager to Siam has not supplied any defects in his interesting narrative.

Personal Features.] In person the Siamese are rather small but well made [2]. "The figure of the countenance, both of men and women, has less of the oval than of the lozenge form, being broad, and raised at the top of the cheeks: and the forehead suddenly contracts, and is almost as pointed as the chin. Besides their eyes, rising somewhat towards the temples, are small and dull; and the *white* is commonly completely yellow. Their cheeks are hollow, because the upper part is two high: mouth very large, with thick pale lips, and teeth blackened by art. Complexion coarse, brown mixed with red, to which the climate greatly contributes *."

From this description it would appear that the Siamese are much inferior in personal appearance to the Birmans; and rather approach to the Tataric or Chinese features.

Dress.] The dress is extremely slight, the warmth of the climate rendering clothes almost unnecessary. A muslin shirt with wide sleeves, and a kind of loose drawers, are almost the only garments of the rich, a mantle being added in winter. A high conic cap covers the head. The women do not use the shirt but a scarf; and the petticoat is of painted calico: but with this slight dress they are extremely modest.

Amusements.] The Siamese excel, as already mentioned, in theatrical amusements. The subjects are often taken from their mythology, and from traditions concerning their ancient heroes. According to Loubere the *Cone* is a kind of pantomime, with music and dancing: the *Lacone* is a serious drama, generally requiring three days to represent: the *Rabam* is a jocund dance by men and women. For an account of the other amusements the reader must be referred to that intelligent voyager; who describes the races of oxen and those of boats, the combats of elephants, cock-fighting, tumbling, wrestling, and rope-dancing, religious processions, and illuminations, and the beautiful exhibitions of fire-works. The men are generally indolent to excess, and fond of games of chance, while the women are employed in works of industry.

Language.] Like the other languages of further India the Siamese has not been completely investigated, and compared with the adjacent tongues. There are thirty-seven letters, all consonants, while the Bali has thirty-three [3]. The vowels and diphthongs constitute a distinct alphabet. The R appears, which is not known to the Chinese, and the W. There is a considerable chant in the enunciation, as in other ancient languages: and as Europeans in general consider this change of voice as ridiculous, though really pleasant and strictly comformable to nature, it is in vain to attempt the just pronunciation of even Greek or Latin, till this prejudice be overcome, if it be not indeed invincible. There are no inflexions of verbs or nouns; and the idioms being

[2] Loub. i. 81.

* Kæmpfer, i. 29, calls them negroes, so dark did their complexions appear to him; and he compares their persons to apes.

[3] Loub. ii. 73.

very

very remote from those of Europe, any translation becomes very difficult. The words seem mostly monosyllabic, like the Chinese.

The Bali of the Siamese resembles that of the Birmans; but a curious topic of research would be to compare the vulgar tongues of exterior India.

LITERATURE.] In literature the Siamese are far from being deficient, and Loubere has well explained their modes of education [4]. At the age of seven or eight years the children are often placed in the convents of the Talapoins, where they are instructed in reading, writing, and accounts, for the mercantile profession is very general. They are also taught precepts of morality; but it is to be regretted that Boodh is not only the god of wisdom but of cunning, which is esteemed, if not a positive virtue, yet a proof of superior abilities, whence his followers ever attempt to over-reach others. This singular perversion of the moral sense, by which honesty and sincerity are branded as marks of folly, is not unknown to some Europeans, but has not yet been adopted as a precept of religion; in this respect therefore the morals of the Chinese, and other oriental traders, must be computed by a new standard. Books of history are not unknown, and there is an excellent code of laws. Poetry, tales, and mythologic fables, seem to constitute the other departments of Siamese literature.

CITIES AND TOWNS.] The capital city of the kingdom has been called Siam, by the vague ignorance of the Portuguese navigators. In the native language the name approaches to the European enunciation of Yuthia. It is situated in an isle, formed by the river Meinam. The walls, in Loubere's time, were extensive; but not above a sixth part was inhabited. Its condition, since it was delivered from the Birman conquest in 1766, has not been described. Loubere's method is unhappily mingled and digressive, so that his information concerning the capital is suddenly interrupted by other topics. It must therefore suffice further to observe that the royal palace was on the north; and that on the east there was a causy *, affording the only free passage by land. Distinct quarters were inhabited by the Chinese, Japanese, Cochin-Chinese, Portuguese, and Malays. Mandelslo seems to have lent some faith to the fables of that notorious voyager Pinto; but Yuthia has not impressed other writers in a respectable point of view. The temples, pyramids, and royal palace, seem greatly inferior in all respects to those of the Birmans †.

The other chief towns in the Siamese dominions are Bankok, at the mouth of the Meinam; with Ogmo and others on the eastern coast of the gulph of Siam. On the western D'Anville marks Cham, Cini, and others as far as Ligor. Along the banks of the great river are Louvo and Perselouc, with others of inferior note. Loubere mentions Motac as the chief town on the N. W. frontier. Louvo was a royal residence for a considerable part of the year. In general these towns were only collections of hovels, sometimes surrounded with a wooden stockade, and rarely with a brick wall. As there is no complete description of the country, it would be superfluous to dwell on old descriptions of places perhaps ruined in the frequency of oriental revolutions; while other cities may have arisen as yet unknown to geography.

In the S. W. Tanaserim and Merghi must seemingly be now regarded as Birman possessions; and the remaining fragment of the Siamese territory in that quarter presents no considerable town, though villages appear in Jonkseylon and some of the other isles.

[4] Loub. i. 180.

* This word being from the French *chaussee, causeway*, seems an odd colloquial translation.

† According to Turpin, i. 12, the Siamese denominate the royal city Sigathia, or simply Crumg, that is to say, the court. It is surrounded by three great rivers, and the chief temples were in the southern quarter. During the inundation, which begins in the end of July, this city resembles Venice. The houses are of wood, but the king's palace of brick, gilt in many parts; the roofs being of tin with stripes of rich gilding.

EDIFICES.]

EDIFICES.] The industrious Kæmpfer, on his voyage to Japan in 1690, visited Siam; and his account, though brief, is solid and interesting. He minutely describes two remarkable edifices near the capital [5]. The first is the famous pyramid called Puka Thon, on a plain to the N. W., erected in memory of a victory there obtained over the king of Pegu. It is a massy but magnificent structure, about 120 feet in height, in a square spot inclosed by a wall. The first stage is square, each side being about 115 paces long. The others vary in form; and there are open galleries ornamented with columns. At the top it terminates in a slender spire. He mentions the surrounding temples as being built of brick, whence it may be inferred that the pyramid is of stone*, perhaps resembling those of the Birmans.

The second edifice consists of two squares to the east of the city, each surrounded with a fair wall, and separated by a channel of the river. They contain many temples, convents, chapels, and columns, particularly the temple of Berklam, with a grand gate ornamented with statues and other carvings; the other decorations were also, by his account, exquisite.

That intelligent voyager also describes some other edifices; and his ideas on the subject deserve to be contrasted with those of Loubere, who, accustomed to the pomp of Louis XIV., or disgusted by the massacre of his countrymen, may in this, and some other instances, have perhaps given unfavourable representations of this celebrated country.

MANUFACTURES.] Though the Siamese be an indolent, yet they are an ingenious people, and some of their manufactures deserve praise. Yet the ruinous and despotic avarice of the government crushes industry by the uncertainty of property. The service of six months, due by every subject to the sovereign, also proves an invincible obstacle. They are little skilled in the fabrication of iron or steel; but excel in that of gold, and sometimes in miniature painting. The common people are mostly occupied in procuring fish for their daily food, while the superior classes are engaged in a trifling traffic.

COMMERCE.] Loubere gives us little or no intelligence on the nature of their commerce, passing, in his usual way, to the manner of signing names, the weights and measures, and the singular shape of their coins. Mandelslo informs us that the commerce of Yuthia consisted in cloths imported from Hindostan, and various articles from China; in exports of jewels, gold, benjoin, lacca, wax, tin, lead, &c, and particularly deer-skins, of which more than 150,000 were sold annually to the Japanese. Rice was also exported in great quantities to the Asiatic isles.

The king was, by a ruinous policy, the chief merchant, and had factors in most of the neighbouring countries. The royal trade consisted in cotton cloths, tin, ivory, saltpetre, rack, and skins sold to the Dutch [6].

The following recent information is derived from a valuable collection [7]. "The productions of this country are prodigious quantities of grain, cotton, benjamin; sandal, aguallo, and sapan woods; antimony, tin, lead, iron, load-stones, gold, and silver; sapphires, emeralds, agates, crystal, marble, and tambac."

The considerations of the bishop of Tabraca upon the trade of Siam may be found interesting to this commercial country, and are therefore subjoined †.

"The misfortunes which attended the French expedition to Siam, in the reign of Louis XIV., have, without doubt, created a disgust against any new establishments. The French ministers have always resisted the solicitations of the missionaries; but, if we

[5] Kæmpfer, i. 50.

* He specially mentions, i. 43, that many houses and some bridges in Yuthia were of stone: and he says, p. 45, that the temples exceed German churches in magnificence.

[6] Loub. i. 286. [7] Dalrymple's Oriental Repertory, p. 118. † Turp. ii. 351.

consider

consider the advantages which other Europeans derive from their commerce with this kingdom, it must be agreed that the French, naturally impatient, easily allow themselves to be discouraged by the first obstacles, and that they disdain sources of wealth, if they do not open themselves under their feet.

The Siamese king had permitted the French merchants to erect a factory, where they enjoyed the public esteem, and became the most favoured nation. Two cities had been yielded in absolute property to Louis XIV., in return for the troops that he had sent to defend the kingdom. The revolution, which happened during the administration of Phalcon, obliged the French to quit Siam, and from that period only a few of their ships from Surat have visited the ports of that country; while at first the supreme consul of Pondicherry sent several every year, of which there was always one destined solely for the port of Merghi. They were exempt from paying the ordinary duties, and the French missionaries, respected on account of their integrity, were the only judges appointed to decide any disputes that might happen to arise between the Europeans and the natives.

" More than a century has past since the English had at Siam any factory, or agent, though some of them carried on there a commerce more useful than ostensive. It was the Dutch who had seized all the sources of wealth. Their factory was the most beautiful and spacious house in the kingdom, and they enjoyed great privileges. The king of Siam, from a mistaken policy, hurtful to his own interest as well as to those of his subjects, reserved to himself the exclusive privilege of carrying on foreign trade, which soon became languid, because the interested despot fixed at his will the price of merchandise.

" Since the last revolution, the form of the government is absolutely changed, and it would now be easy for the French to re-establish their commerce by erecting a factory at Merghi, as before, or in the neighbourhood of the capital. They might protect this establishment by raising a fort, as their ancestors formerly did at Bancok, of which the foundations and ruins may be seen to this day. It was naturally defended by a large and deep river, resembling a lake; and was only about twelve leagues distant from the sea.

" The French might re-establish this fort: 1. Because they have a claim for the losses they sustained in 1680: 2. Because the ground had been formerly ceded to them: 3. Because there remain considerable sums due by the government of Siam to the French India company: and lastly, by the facility of over-awing a pusillanimous people, which trembles at the sight of an armed Frenchman.

" Since the retreat of the Birmas into their country, the kingdom of Siam is governed by many little tyrants who destroy each other. Bancok and Merghi have their little princes. The French ministry might enter into an agreement with one of these usurpers; who, flattered with the protection of France, would willingly yield a spot of ground where a citadel might be erected for the protection of her trade. This factory and fortress would serve as a mart to Pondicherry, in carrying on the Chinese trade. The country produces all the materials requisite for building, as brick, and lime made of shells.

" All the neighbouring nations would crowd there to traffic; and many Christian families, wandering without a country since the irruption of the Birmas, would here find a refuge. The Chinese, who equip ships at a very small expence, sometimes sent forty in the course of one year. They would be eager to bring hither their merchandise from the hopes of a quicker sale; and our India company would save the expences which consume a part of the profit from the necessity of so distant a voyage. The Mahometans, descended from the Arabs, the Monguls, and the Persians, have long maintained commercial relations with the royal city; and to renew them,

they only wait for an establishment, which would open easy and profitable channels of trade.

" The foundations would be easy to form, and the means of strengthening them would be found in the re-establishment of the college, which the French missionaries possessed in this kingdom, where they enjoyed great consideration; and it would be advantageous to find in this foreign country a society familiar with the manners, the customs, the vices, and the virtues, of men whose fellow-citizens they had become. The knowledge of the languages used in all the neighbouring countries would furnish a great resource; and the French merchants would no longer be exposed to the risk of unfaithful interpreters.

" In the description of this kingdom may be seen the various productions which might form objects of commerce. If even the branches were not found to be so extensive, as might be expected in a country which produces ambergris, agates, diamonds, pearls, perfumes, sweet-scented and dying woods, there would still be a sufficient recompence by the advantages which might be procured by a trade with the surrounding nations, of which this kingdom is by its position the point of re-union."

CHAPTER IV.

NATURAL GEOGRAPHY.

Climate and Seasons.—Face of the Country.—Soil and Agriculture.—Rivers.—Lakes.—Mountains.—Botany.—Zoology.—Mineralogy.

CLIMATE AND SEASONS.] THE two first months of the Siamese year, which correspond with our December and January, form the whole winter of this country: the third, fourth, and fifth, belong to what is called their little summer; the seven others to their great summer [1]. Being on the north of the line, their winter of course corresponds with ours; but is almost as warm, says our author, as a French summer. The little summer is their spring; but autumn is absolutely unknown in their calendar. The winter is dry; the summer moist; the former is distinguished by the course of the wind, which blows almost constantly from the north, refreshed with cold from the snowy mountains of Tibet, and the bleak wastes of Mongolia.

FACE OF THE COUNTRY.] This country, as already mentioned, is a wide vale between two high ridges of mountains, thus somewhat resembling Egypt on a wider scale. Compared with the Birman empire, the cultivated level is not above half the extent either in breadth or length. Nor do the Siamese seem so industrious as the Birmans, as their agriculture does not appear to extend far from the banks of the river and its branches; so that towards the mountains there are vast aboriginal forests filled with wild animals, whence the numbers of deer and other skins exported as merchandise. The rocky and variegated shores of the noble gulf of Siam, and the size and inundations of the Meinam, conspire with the rich and picturesque vegetation of the forests, illumined at night with crowds of brilliant fire-flies, to impress strangers with delight and admiration.

SOIL.] The soil towards the mountains is parched and unfertile, but on the shores of the river consists, like that of Egypt, of an extremely rich and pure mould, in which it is even difficult to find a pebble. It is in fact a muddy deposition, accumulating from early ages, and manured, as it were, by regular inundations, so as to produce exuberant quantities of rice. The country would be a terrestrial paradise, were it not subject to the most absurd despotism, which impoverishes itself, and may perhaps be classed among the worst of governments, being far inferior to that of their neighbours the Birmans.

AGRICULTURE.] Agriculture, as usual in the east, is simple and primitive. The chief product is rice of excellent quality; but wheat is not unknown, in lands not subject to the inundations. Peas, and other vegetables, also abound. Maiz is confined to their gardens. From indolence or prejudice seldom more than one annual crop is taken from the same land [2].

RIVERS.] The grand river Meinam, a name which signifies the *mother of waters*, reigns supreme among the Siamese streams. Loubere [3] asserts that this river is so

[1] Loub. i. 53. [2] Ib. i. 50, who has engraved the Siamese plough. [3] Ib. i. 7.

small

small when it enters the dominions of Siam, that for about fifty leagues it can only convey small boats, not capable of carrying above four or five persons. By his account it is afterwards swelled, at the town of Laconcevan, by another considerable river from the north, also called Meinam: but this in our modern maps * is a mere re-union of a branch of the river; and this error of Loubere may lead us to suspect his information concerning the smallness of the stream, which may probably be only impeded by *rapides*, or declivitous cataracts. On the contrary, when we consider the regular inundations, resembling those of the Nile and Ganges, rivers of long course, and other circumstances, there is room to infer that the Meinam is of a more distant and higher extract than from the mountains of Yunnan in the west of China; and that the Tibetian alps furnish its source in that of the Nou Kian of the lamas, supposed to be the Thaluan or river of Martaban, which has no delta, nor any marks of so distant an origin, but is represented by Loubere and D'Anville as a short and insignificant stream.

However this be, the Meinam is deservedly celebrated among the oriental rivers. Kæmpfer informs us that it is very deep and rapid, always full, and larger than the Elbe [4]. He adds that the inhabitants suppose its source to be in the mountains which give rise to the Ganges, and that it branches through Cambodia and Pegu, an account somewhat confirmed by the discovery of the river Anan, which connects the Meinam with the river of Cambodia. But they fabled that other branches passed through immense forests even to the Ganges. The inundations are in September, after the snows have greatly melted in the northern mountains, and the rainy season has commenced. In December the waters decline, and sink by degrees to their former level. The same intelligent traveller informs us that the water in the earth swells before the river rises: that the wells are nitrous, but the water of the Meinam, though muddy, is pleasant and salutary: that the inundations are chiefly perceivable towards the centre of the kingdom, not near the sea, the causes being somewhat exhausted: that the rice is reaped in boats, and the straw left in the water: that a festival is celebrated in December, when the wind begins to blow from the north, and the inundation abates.

The banks of the Meinam are generally low and marshy, but thickly peopled from Yuthia to Bankok, below which are wild desarts like the Sunderbunds of the Ganges. Monkeys, fire-flies, and moskitoes, swarm on the fertile shores.

To the north of the Siamese dominions some rivers join the Meinam; but their names are unknown, and they belong to the Birman territories. The same observation may be applied to the river of Tanaserim, and that of Tavoy. In the S. E. is that of Shantebon; and a stream which joins the delta of the Meinam.

Lakes.] In the east of the kingdom a small lake is delineated, giving source to a river which flows into that of Cambodia; and it is probable that others may exist near the mountains, though unknown to geographers.

Mountains.] The extensive ranges of mountains which inclose this kingdom on the east and west have been repeatedly mentioned. These may be called the Siamese chains, till the native names be ascertained. A small ridge also passes east and west, not far to the north of Yuthia, which Loubere seems to call Taramamon. In the north Siam terminates in plains; nor does it, even by conquest, seem ever to have reached the mountains on the Chinese frontier.

Forests.] The forests are numerous and large, and produce many kinds of valuable woods; but the teak is not mentioned.

Zoology.] The chief animals of Siam are elephants, buffaloes, and deer. Horses seem little known or used, though found wild in Tibet: yet there are or were, a few ill-

* D'Anville however follows Loubere.

[4] Kæmpfer, i. 67. Fr. edit.

mounted cavalry. The elephants of Siam are of distinguished sagacity and beauty; and those of a white colour are treated with a kind of adoration, as the Siamese believe the soul of such is royal. Wild boars, tigers, and monkies, are also numerous. The Meinam is, at distant intervals of time, infested with small poisonous serpents; and the trees on its banks are, as already mentioned, beautifully illuminated with swarms of fire-flies, which emit and conceal their light as uniformly as if it proceeded from a machine of the most exact contrivance.

MINERALOGY.] Mandelslo, or rather his translator Wicquefort, who added, about the year 1670, the accounts of Pegu, Siam, Japan, &c., informs us that Siam contains mines of gold, silver, tin, and copper. Loubere dedicates a whole chapter to the Siamese mines; and expresses an opinion that they were in preceding ages more industriously wrought, as the ancient pits evinced; not to mention the great quantity of gold, which must have been employed in richly gilding the idols, pillars, cielings, and even roofs of their temples. In his time, though Europeans were employed, no mine of gold or silver could be found which was worth the working. Yet some copper mines were discovered, which yielded a small proportion of gold; and a larger proportion constituted the metal called *tambac*. The best native tambac was found in the isle of Borneo. Le Blanc says that the Peguese had a mixture, probably artificial, of copper and lead, which they called *ganza*.

Loubere adds that a French physician employed by the Siamese monarch, had discovered antimony, emery, and some other minerals, with a quarry of white marble. He also boasted that he had found a mine of gold, which he concealed from the natives.

But the mines chiefly wrought by the Siamese were of tin and lead. The tin, called *calin* by the Portuguese, was sold throughout the Indies, but was soft and ill refined, as it appeared in the tea-cannisters then used. Loubere adds that zink was added to form tutenag; and error, for tutenag is a native mixture of zink and iron. In another passage he informs us that all the tin, except that of Junkseylon, was a royal perquisite[s].

Near Louvo was a mountain of load-stone: and another in Junkseylon of inferior quality. Fine agates abounded in the mountains, nor were sapphires unknown; but the addition of diamonds seems doubtful, if the doubt be not a negation that so precious a substance should remain so long unknown. The *mines of steel*, mentioned by our author, seem to imply a pure iron easily converted into steel, or rather a carbonated ore of iron, which was however so little wrought that wooden anchors were used*.

The chorography of Siam is too imperfect to supply any account of mineral waters, or natural curiosities.

ISLES.] Among the numerous and minute isles which owe a doubtful subjection to Siam, Junkseylon alone deserves mention, if it be not reduced under the power of the Birmans. By Captain Forest's account, who visited this isle in 1784, it annually exports about 500 tons of tin, and contains 12,000 inhabitants.

[s] Loubere, i. 287.

* The work of Turpin, adds little or nothing to our knowledge of Siamese mineralogy, and he seems indebted to Loubere. His whole knowledge on the subject is confined to three pages, i. 208. He speaks of the mines of gold as being exhausted or unknown, and says that none have been wrought except those of tin, lead, and iron. The tin ore resembles a black sand, is washed in order to detach it from the soil, and forms a great article of commerce. Pearls are found near the isles of Merghi, and he asserts that a mine of diamonds was discovered in the mountains, but neglected. His account of the Calin, i. 213, is borrowed from Loubere.

THE other states of exterior India are Laos, Cambodia, Siampa, Cochin-China, and Tunquin; countries unimportant in themselves, and concerning which the materials are imperfect.

LAOS.

ACCORDING to Kæmpfer[1] this was a powerful state, surrounded with forests and desarts: and difficult of access by water, because the river is full of rocks and cataracts. But by the newly discovered river of Anan the passage from Siam may perhaps be expedited. The soil is represented as fertile in rice; and Laos furnished the merchants of Cambodia with the best benjoin and lacca. Exquisite musk is also brought from Laos, with some gold and rubies; and the rivers boast of the fresh water mya, which yields pearls. The religion and manners resemble those of Siam; but in personal appearance the people of Laos resemble the southern Chinese. The chief towns were in Kæmpfer's time, Landjam and Tsiamaja. The former is also styled Lantchang; and Sandepora is added in modern maps: from the former the people are called Lanjanese.

This kingdom, from its inland situation, is less known than any other state of further India, and scarcely any recent materials can be indicated. It remains an object of curious investigation to future travellers*. Du Halde has however published a route from China to Siam by land, in which some account is given of Lahos or Laos. In the language of the country Mohang signifies a town; and the capital is styled Mohang Leng by the Chinese[2]. It is of considerable extent, but only inclosed with a palisade: on the west are large forests and several rivers. This city stands on both sides of a river called Meinam Tai, which by the Chinese accounts joins the river of Siam, so that perhaps the Anan is to the south of the capital. Fish is rare, but buffalo and venison are common in the markets. About five days journey to the north of Mohang Leng are mines of gold, silver, and copper; and one of rubies near the city: emeralds are also found, of great size. Tin, red sulphur, (perhaps cinnabar, or rather realgar,) cotton, tea, sapan or brazil-wood, are also exported. Laos was then tributary to Ava: but the chief trade was with the Chinese. Du Halde's account is not a little confused: and though he gives the names of many provinces and towns, it would be impossible to construct a sketch of a map from his description. The chief river is styled Meinam Kong, which afterwards passes through Cambodia. It would seem that branches of the same river are distinguished by different names. In Mr. Dalrymple's valuable map of exterior India this grand stream is called the Kiou Long, or Maykaung; and Mr. Arrowsmith derives it from the Tibetian alps, where it is styled the Satchou, and afterwards by D'Anville the Lan-tsan Kiang; which seems to identify it as implying the river of Lantsang, or Leng, the capital of Laos.

The most recent account of this country seems to be that given by M. Turpin †. According to this author, the name Laos implies a thousand elephants, and was derived from the great abundance of these animals. The climate is so temperate, and the air

[1] Kæmpfer, i. 40.

* The common accounts in geographical compilations are derived from Marini, an Italian Jesuit, whose account of Tunquin and Laos appeared about 1650, and a French translation 1661, 4to.

[2] Du Halde, i. 125. † Turpin, ii. 381.

so pure, that men are said to be healthy and vigorous sometimes to the age of one hundred years. The flat part of the country nearly resembles Siam, but the eastern bank of the river is more fertile than the western. The rice is more esteemed than that of other oriental countries.

Though the ivory be beautiful, the horn of the rhinoceros is preferred, and is kept with superstitious attention, being thought to insure the felicity of the possessor. The florid fields supply food to numerous swarms of bees, and the wax and honey are excellent. Rich mines of tin, iron, and lead are found in the mountains; but gold and silver are only sought in the sands of the rivers, and explored with small nets of iron. Musk is not a product of the country; and it is difficult to define the meaning of our author, when, on this and on other occasions, he mentions ambergris, a marine production. The fish in the main river may be very large; but where do they procure the salted herrings which they eat with rice? Equally great is his skill in natural history when he informs us that rubies are produced by a saline scum which covers the fields after the rice harvest!

The Chinese carried on a considerable commerce with Laos, before the irruption of the Tatars, exchanging velvets, silks, cottons, and porcelain, for ivory, opium, and medicinal plants.

In the province of Laos, which imparts its name to the kingdom, there is a deep mine, which affords rubies, and above all, beautiful emeralds, of which one in the royal treasury is said to be as large as a common orange.

The people of Laos are said to rank among the few honest nations in the east, being celebrated for the rectitude of their procedure, and fidelity to their promise. They are very sensible of their reputation on these objects; and if a traveller be robbed, the nearest town or village is obliged to indemnify him for the damage sustained. On the other hand they, are indolent and luxurious, and given to the study of magic, so prevalenr amongst numerous nations, that one would be led to imagine that nonsense is the superlative attribute of mankind.

Our author computes the Laosian army at five hundred thousand combatants, in which he is as credible, as when he adds, that a numerous army might be raised of men who have lived a century. The people pass the bounds of oriental sobriety, eating daily four repasts of rice, fish, and the flesh of the buffalo.

Marriages are easily contracted and dissolved, and the rich entertain numerous concubines. A funeral is rather a festival; and a sum of money is deposited in the tomb, which the priests take care to circulate after a decent period.

The commerce of this country was formerly chiefly with Siam, and after the irruption of the Birmas, it passed to Pegu; latterly the trade of Laos has been transferred to Cambodia.

The Laosians boast that they taught the Siamese the art of writing on the leaves of the palm tree. The tongue and characters are said to be the same; but a Laosian cannot pronounce the letters *L* and *R*.

Their ancient worship is said to have been very pure, and directed solely to one God the Creator of all, who was only to be pleased by the exercise of virtue, and not by sacrifices, ceremonies, and the observance of certain days. The commerce with China corrupted this purity of faith. Priests appeared, and produced books written in foreign language and characters; and were credited, because they were not understood. They believe in regular renovations of the universe; and that our earth has attained the age of eighteen thousand years. Polygamy is one of the promised joys of paradise; but as this idea does not delight the ladies, they have solemn assurances that, if they lead a virtuous life, they shall be changed into men, and take a sweet vengence for the privations they have suffered. The priests console themselves for their celibacy, in the firm belief,

that in another world they can create as many women as they choose, by a sacred privilege peculiar to their order. Some of their ceremonies, like those of Tibet, seem to have passed from the Nestorian Christians. They even sell dispensations and pardons to the rich, while the poor alone are condemned to perpetual misery.

CAMBODIA.

This country is also called Camboja and Camboge; and being partly maritime, is known by repeated descriptions. Like Siam, it is inclosed by mountains on the east and west, and fertilized by a grand river, the Maykaung or Makon, near its estuary, from some absurd caprice, called the Japanese river. In the compilation by Wicquefort, styled the voyage of Mandelslo, it is said that this river begins to inundate the country in June. Near its mouth it is full of low isles and sandbanks, so that the navigation is impeded, and there is no port nor town. The country is thinly peopled, and the capital called Cambodia, perhaps because we know not the native term, consists only of one street, with a single temple. The most peculiar product is the substance styled gamboge, or rather Camboge gum, yielding a fine yellow tint. Ivory also abounds, with several precious woods; and some add gold, The country is fertile in rice, and animal food. There are many Japanese settlers, with Chinese and Malays, which last can scarcely be distinguished from the natives, who are of a dark yellow complexion, with long black hair.

It is unnecessary to enlarge on the old and trivial accounts of this country. M. Poivre* observes that, not far from the capital, the traveller sees with astonishment the ruins of an ancient city built with stone, the architecture somewhat resembling the European, while the adjacent lands are marked with furrows of former cultivation. Among the present possessors of the country no tradition exists concerning this city. But French travellers are often fond of the romantic; and this information remains to be confuted or confirmed *.

Turpin in his work, constructed upon the papers of the French missionaries in Siam, gives some additional information concerning this kingdom. Its vicinity to the line renders the heat so great that there are few habitations, except on banks of rivers or of lakes, where the musquitos are numerous and offensive. Among the products he mentions excellent sugar and indigo, fruits of many kinds, sandal and other precious woods, with opium and camphor. The mountains produce fine rock crystal, and he adds amethysts, jacinths, rubies, topazes. Silk and ivory are common: an ox weighing five hundred pounds does not cost above three shillings, and one hundred and forty pounds of rice may be had for the value of four-pence,

The coasts, which extend about one hundred and forty leagues, only present about five or six ports where vessels can anchor with safety. The most celebrated is opposite to Siam, and carries on a considerable trade in lacquer and elephants' teeth. There are many small islands between Cambodia and Siam, which render the navigation dange-

*Poivre, 78.
He tells, p. 105, a similar tale of a brick wall near the capital of Cochin-China.

rous.

rous. The natives are mingled with Japanese, Malays, and Portuguese, the latter being a degenerate race, partly lapsed into idolatry; and the modesty of the women is far from being equal to their beauty. The Dutch were viewed with jealousy; and other nations have been disgusted from forming any lasting settlement in that country.

Their religious creed partakes of the Mahometan voluptuousness; and the first class of priests has usurped the precedence over the monarch, who, in other respects, is despotic. He seizes on the property of his subjects, or rather slaves; and the right of inheritance is violated by his caprice. The country is in consequence little populous, as tyranny exhausts its own wealth and power.

SIAMPA.

This small maritime tract is to the S. E. of Cambodia, from which it seems to be separated by a ridge of mountains. Mr. Pennant* informs us, from an old French narrative, that the people of this country are called Loyes; and are large, muscular, and well made, complexion reddish, nose rather flat, with long black hair: dress very slight[1]. The king resides at Feneri, the capital, and was tributary to Cochin-China. Productions, cotton, indigo, and bad silk. Their junks are well built, and are much employed in fishing.

Turpin adds, that the people of Siampa are mild and affable, especially towards strangers, and live in a severe subordination. The creed of Mahomet is here mingled with that of Confucius, the paradise of the prophet finding easy belief amongst the voluptuous orientals. But the shade of faith becomes obscure, and the pretended followers of the Koran devour pork, and lend their concubines to strangers †.

The Chinese arrive yearly with tea, porcelain, silk, and other articles, which they exchange for odoriferous woods and gold.

COCHIN-CHINA.

This country, presenting an extensive range of coast, has been visited by many navigators, who have supplied considerable materials for its description. The name is said to imply Western China, and appears to have been imposed by the early navigators, perhaps from the Malay appellation, while the native name remains unknown. In his account of the late embassy to China Sir G. Staunton has given a comparatively ample description of this country.

* With D'Anville he spells the name Ciampa. Staunton, i. 364, puts Tsiompa, and says it appears from the sea as a sandy tract intersected with rocks.

[1] Outlines, iii. 51. † Turpin, ii. 404.

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An usurper had extended his conquests over Tunquin, while the descendants of the former royal family were restricted to the southern districts. A considerable degree of civilization appeared, and it is said that the people are of Chinese extract: nay some assert that this country was anciently a part of that great empire. The aboriginal savages, called Moos or Kemoos, are confined to the western range of mountains. As the shores abound with havens, the canoes and junks are numerous. The harbour, called Turon by Europeans, is a noble inlet, minutely described by our author. The country is divided into distinct provinces, the capital being Hue-fo, about forty miles to the north of Turon, which is called Han-san by the natives. It was reported that the garrison in Hue-fo amounted to not less than thirty thousand men, armed with matchlocks, besides elephants of war. Sabres and pikes are also used.

The superior ranks are clothed in silk, and display the politeness of Chinese manners. The dress of both sexes is similar, being loose robes with large long sleeves; and cotton tunics and trowsers. A kind of turban covers the head of the men: but no shoes nor slippers are used. The houses are mostly of bamboo, covered with rushes or the straw of rice: and stand in groves of oranges, limes, plantains, and cocoa trees. Poultry abounds in the markets; and at an entertainment were served pork and beef, two porcupine quills supplying a knife and fork. An ardent spirit is drank distilled from rice, and the amusements of the theatre are not unknown. They evince some skill in the manufacture of iron, and their earthen ware is very neat. The rainy season is during September, October, and November; and the three following months are also cold and moist, presenting the semblance of an European winter. The inundations only last two or three days, but happen once a fortnight in the rainy season. Borri's account bears that the rains only continue for three days regularly in each fortnight: if true a singular phænomenon [1]. March, April, May, form a delicious spring; while the heat of the three following months is rather excessive.

The horses are small, but active: there are also mules and asses, and innumerable goats. The products of agriculture are rice of different qualities, yams, sweet potatoes, greens, pumpkins, melons. Sugar abounds, and is excellently purified by a process described by Staunton. Gold dust is found in the rivers; and the mines yield ore of singular purity. Silver mines have also been lately discovered. Both metals are used in ingots, as in China. The little trade is chiefly conducted by the Portuguese from Macao.

Mr. Pennant mentions tigers, elephants, and monkies, as abounding in Cochin-China [2]; and that able naturalist adds that the edible birds' nests, esteemed a luxury in China, are chiefly found in this country. They are formed by a species of swallows from some unknown viscous substance; and the Dutch used to export great numbers from Batavia, gathered in the oriental isles, and on the coast of this country.

The French missionaries in Siam observed that the chief commerce of that country was with Cochin-China. It is a very populous and fertile country, the mud left by the inundations serving the purpose of manure. The rhinoceros abounds in the mountains, being larger and more vigorous than in most other oriental countries: we are told that the foot of the male is half a yard in circumference, and the tusks (he means horns) sometimes of the incredible length of five yards *! When travellers detail such extraordinary circumstances, they ought at least to be extremely minute, and circumstantial; for truth itself is not always probable.

Bad silk abounds to such a degree as even to supply nets, ropes, and sails. Oil is derived from the land tortoise. Wine seems not to be unknown; but arrack is generally preferred. The great are magnificent in their dress, using many pearls, which

[1] Churchill's Col. vol. ii [2] Outlines, iii. 65. * Turpin, ii. 408.

they prefer to diamonds. The women are veiled; but when saluted they display their countenance.

Their religion resembles that of China, but the temples are neglected. The first act of theft is punished by the loss of a finger, the second by that of an ear, and the third by death.

Besides a capitation tax, amounting to about twelve shillings sterling upon each male, from the age of eighteen to that of sixty, each subject is obliged to labour for the sovereign during eight months of the year. Property is little respected, the king commonly seizing upon the estates at the death of the possessors, and leaving nothing to the children except the money and moveables.

The constitution is entirely military, but the chief dignities of the state are entrusted to eunuchs, on the supposition that having no children they will be less avaricious; the soldiers are clothed with satin, and the officers with velvet inwoven with gold or silver. There are even military schools, where children are educated at the expence of the public treasury. Emulation is excited by recompenses, and by shame, robes of silk and other decorations being assigned to those who excel; while linen garments degrade those who do not profit by the lessons and example.

A still more recent account of this country shall here be presented to the reader in the words of the author, Mr. Chapman, who passed hither from Bengal in 1778*.

"Cochin-China, called by the natives Anam, extends from about the 20th degree of north latitude to Pulo Condore which lies in 8° 40'. It is bounded by the kingdom of Tonquin on the north, from which it is separated by the river Sungen, by the kingdom of Laos, and by a range of mountains, which divides it from Cambodia on the west; and by that part of the eastern ocean, generally called the China sea, on the south and east.

"The kingdom is divided into twelve provinces, all lying upon the sea coast, and succeeding each other from north to south.

"The breadth of the country bears no proportion to its length. Few of the provinces extend further than a degree from east to west, some less than 20 miles: Donai, which is properly a province of Cambodia, is much larger.

"The whole country is intersected by rivers, which, although not large enough to admit of vessels of great burthen, yet are exceedingly well calculated for promoting inland commerce.

"The climate is healthy, the violent heat of the summer months being tempered by regular breezes from the sea. September, October, and November, are the seasons of the rains; the low lands are then suddenly overflowed by immense torrents of water which fall from the mountains. The inundations happen generally once a fortnight, and last for three or four days. In December, January, and February, there are frequently rains brought by cold northerly winds, which distinguish this country with a winter different from any other in the East. The inundations have the same effect here as the overflowings of the Nile in Egypt, and render the country one of the most fruitful in the world. In many parts the land produces three crops of grain in the year. All the fruits of India are found here in the greatest perfection, with many of those of China.

"No country in the East produces richer or a greater variety of articles proper for carrying on an advantageous commerce, cinnamon, pepper, cardemoms, silk, cotton, sugar, Agula-wood, Japan-wood, ivory, &c. Gold is taken almost pure from the mines; and before the troubles great quantities were brought from the hills in dust, and bartered by the rude inhabitants of them for rice, cloths, and iron. It was

* Asiatic Register, iii. 84.

from them also the Agula and Calambac woods were procured, with quantities of wax, honey, and ivory.

" The animals of Cochin-China are bullocks, goats, swine, buffaloes, elephants, camels, and horses. In the woods are found the wild boar, tiger, and rhinoceros, with plenty of deer; the poultry is excellent, and the fish caught on the coast abundant and delicious. The flesh of the elephant is accounted a great dainty by the Cochin-Chinese. The breeding of bullocks is little attended to; their flesh is not esteemed as food, and they are made no use of in tilling the land, which is performed by buffaloes. They are totally unacquainted with the art of milking their cattle.

" The aborigines of Cochin-China are called Moys, and are the people which inhabit the chain of mountains which separate it from Cambodia. To these strong holds they were driven when the present possessors invaded the country. They are a savage race of people, very black, and resemble in their features the Caffres.

" It was about the year 1280 of the Christian era, that the first Tatar prince became possessed of the throne of China. This revolution afforded an opportunity to the western provinces to throw off their dependence, and they were formed into a kingdom, under a prince whose descendant now reigns in Tunquin, and is called Knaw-Whang. About the beginning of the fifteenth century, a large body of people from these provinces being disaffected to the government, joined under a leader of abilities; they soon became masters of the coast of Cochin-China, as far as Cape Aurilla, which lies in latitude 12° 30′ N. The Moys, the original inhabitants, retired to the hills bordering their country to the westward, where they have ever since remained. The emigrants, under their conductor, founded the kingdom of Cochin-China. The continual wars they were engaged in with the Tunquinese, induced them to build a wall on the southern extremity of the province of Dingnoi, to prevent their irruptions. Every communication by sea was strictly forbidden. In the year 1764 the country of Cochin-China was in a flourishing condition, and governed by a prince of abilities; soon after his son succeeded to the throne, and anarchy and confusion ensued.

" The Cochin-Chinese bear evident marks of their being derived from the same stock as the Chinese. They resemble them in their features and most of their manners and customs. Their religion is the same; their oral language, though different, seems formed upon the same principles, and they use the same characters in writing. They are a courteous, affable, inoffensive race, rather inclined to indolence. The ladies are by far the most active sex; they usually do all the business, while their lazy lords sit upon their haunches, smoking, chewing beetel, or sipping tea. Contrary to the custom of China, the ladies are not shut up; and if unmarried, a temporary connection with strangers who arrive in the country is deemed no dishonour. Merchants often employ them as their factors and brokers, and 'tis said the firmest reliance may be placed on their fidelity.

" The habit of the men and women is cut after the same fashion. It is a loose robe, buttoning with a small gnob round the neck, and folding over the breast like a banyan gown, with large long sleeves which cover the hands. People of rank, and especially the ladies, wear several of these gowns, one over the other; the undermost reaches to the ground, the succeeding ones are each shorter than the other, so that the display of the different colours makes a gaudy appearance as they walk along.

" Such are the few particulars relative to Cochin-China. It now remains to shew how a connection with Cochin-China may prove beneficial to this country. The drain of specie from the Company's settlements in India, is become a matter of such serious import, that any plan which may be offered to remedy so growing an evil, I have no doubt, will be deemed worthy of observation. I am sanguine in my expectations, that

a settlement in Cochin-China would conduce to that desirable end, as well as be productive of many other advantages.

" Our two little vessels brought from Cochin-China to the amount of 60,000 rupees in gold and silver bullion. The Rumbold, the year before, also brought bullion to a considerable amount, on account of sales of Bengal, and Madras cloths, opium, iron, copper, lead, hardware, and glass.

" The situation of Cochin-China is excellently well adapted to commerce. Its vicinity to China, Tunquin, Japan, Cambodia, Siam, the Malay coast, the Philippines, Borneo, the Moluccas, &c. renders the intercourse with all these countries short and easy. The commodious harbours formed on the coast, particularly that of Turon, afford a safe retreat for ships of any burthen during the most tempestuous seasons of the year.

" The nations of Europe, having hitherto found it impossible to provide cargoes sufficiently valuable to barter for the commodities of China, are obliged to make up the deficiency by sending hither immense quantities of bullion; by which means it has, for a number of years past, drained the eastern and western worlds of their specie. The number of junks annually resorting to Cochin-China, plainly proves how much the productions of it are in demand amongst the Chinese. These productions, had we a settlement and a confirmed influence in the country, might with ease be brought to center with us; purchased with the staples of India and of Europe, Turon would become the emporium for them, where our ships bound to Canton, from whence it is only five days sail, might call and receive them. It would prove a saving of so much specie to Great Britain or India as the value of the commodities amounted to in China. In a few years, there is every reason to believe, a very considerable investment might be provided.

" Our trade to China has ever been burthened with enormous imposts and exactions. These, under various pretences, are annually increasing, and in process of time may become insupportable. It is an opinion latterly grown current, that the Chinese are desirous of totally excluding all Europeans from their country. May we not hazard a conjecture, that the vexations they oblige them to suffer are the premeditated schemes of this politic people to effect it. Were such an event to happen, the want of a settlement to the eastward would be severely felt; the Chinese would export their own commodities, and Java, or the Philippines, as the nearest ports, would become the marts for them. As there is no reason to suppose that our inability to procure them from the first hand would hinder their consumption, we must buy them either from the Dutch or from the Spaniards. A settlement in Cochin-China will give us a superior advantage to either, both as its situation is nearer, and the Chinese are more accustomed to resort thither: At all events there is reason to suppose it will enable us to procure the commodities of China at a much more reasonable rate, than now purchased by our factors at Canton, and certainly on less humiliating terms to the nation at large. Colonies of Chinese have, from time to time, emigrated from the parent country, and fixed their abode in different parts of Cochin-China. These have their correspondence in every sea-port of the empire. Through their means teas, China-ware, and the various other articles, the objects of our commerce with China, might be imported in junks to our own settlements, equally good in quality and cheaper, as the Chinese are exempted from the exorbitant duties levied on foreigners. Some of the best workmen might be encouraged to settle in Cochin-China, and under direction, manufactures carried to as great a degree of perfection as in China itself.

" The intercourse between Japan and Cochin-China might be renewed, and we might participate in a trade for many years monopolized by the Dutch. An advanta-

geous trade might be carried on with the Philippine Islands, and Madras and Bengal goods introduced amongst them, by means of the junks, for the consumption of Spanish America. The Siamese and Cambodians would bring the produce of their respective countries, and barter or sell them for such articles as they wanted from Cochin-China. Amongst them it is probable a sale might be found for quantities of Bengal cloths. The lower class of people in Cochin-China are, for the most part, clothed in cangas, a coarse cotton cloth brought from China; but the preference which I had an opportunity of observing they gave to Bengal cloths, on account of their being wider and cheaper, would soon induce them to adopt the use of them. The demand for opium, already in some measure become a necessary of life to the Chinese, would increase in proportion to the facility of procuring it. The importation of it, no longer confined to Canton, but carried by the junks to every sea-port in the country, would spread the demand for this drug in the remotest parts of the empire.

" But what inspires the most flattering hopes from an establishment in this country, is its rich gold mines, celebrated for ages as producing the richest ore, so pure, that the simple action of fire is said to be sufficient to refine it. I omitted no opportunity of making inquiries respecting this valuable article, and was told, that mines were formed in different parts of the northern provinces, and particularly in Huè, where the ore lay so near the surface of the earth, that it was dug up with little labour. Under the direction of a skilful metallurgist, what might not be expected from such a source?

" Great as the commercial advantages are, the political ones resulting from a settlement in Cochin-China would be scarce inferior. Turon Bay would not only afford a secure retreat to our Indiamen, in case of losing their passage to China, but from thence we might also intercept the fleets of any hostile power, either going to or returning from that country. We should become formidable neighbours to the Dutch and to the Spaniards, and in the event of a war with either of them, attack with advantage their most valuable settlements.

" Should the Company be induced to form a settlement in Cochin-China, it may be effected on principles strictly just, and at a small expence. Several of the royal family, besides the mandarins who were in Bengal, with many officers of the late government, urged me to use my endeavours with the government of Bengal to induce it to afford them assistance, promising a powerful support whenever we should heartily join in their cause. To restore their lawful sovereign to the throne, would be now a measure so popular that the sincerity of their offers cannot be doubted. To relieve an unhappy people, groaning under the weight of the most cruel oppression, would be an act worthy of the British nation. Fifty European infantry, half that number of artillery, and two hundred Sepoys, would be sufficient for this and every other purpose. The natives of Cochin-China are infinitely below the inhabitants of Hindostan in military knowledge. I have, however, no doubt that a body of them, well disciplined and regularly paid, would prove as faithful to us, and contribute as much to the security of any possessions which we might acquire to the eastward, as the Sepoys do to our territories in India. In case of any distant expeditions, they would be found superior, being entirely free from all religious prejudices, and having no objection to the sea.

" While Cochin-China remains in its present distracted state, a favourable opening is presented to the first European nation that may attempt to obtain a footing in the country. Should the company, therefore, entertain a design of forming an establishment in Cochin-China, no time should be lost in carrying it into execution."

The Paracels form a long chain of small islands with rocks and shoals, parallel to the coast of Cochin-China.

TUNQUIN.

TUNQUIN.

This country was only divided from the former by a small river, and may at present be considered as incorporated with it by conquest. The inhabitants resemble their neighbours the Chinese, but their manners are not so civilized. The products are numerous, and seem to blend those of China with those of Hindostan. While the rivers in Cochin-China are of a short course, those of Tunquin spring from the mountains of Yunnan; and in the rainy season, from May to September, inundate the adjacent country. The chief is the Holi Kian, which, after receiving the Li-sien, passes by Kesho the capital. This city is described by Dampier, an observant voyager, as approaching the Chinese form, with a considerable population.

In the gulf of Tunquin, and adjacent Chinese sea, the tuffoons, or as they have been quaintly latinised, *typhons*, are tremendous. "They are preceded by very fine weather, a presaging cloud appears in the north-east, black near the horizon, edged with copper colour on the upper part, fading into a glaring white. It often exhibits a ghastly appearance twelve hours before the typhon bursts; its rage lasts many hours from the north-east, attended with dreadful claps of thunder, large and frequent flashes of lightning, and excessive hard rains. Then it sinks into a dead calm, after which it begins again with redoubled rage from the south-west, and continues an equal length of time[1]."

No new information concerning this country had appeared for upwards of a century, when, in 1778, was published a description by the Abbé Richard, compiled chiefly from the papers of the Abbé Saint Phalle, who was a missionary in Tunquin for twelve years, and died at Paris 1766. From this work an extract shall here be presented, in the order followed by the author, the country not being of sufficient importance to demand a more formal delineation.

The word Tunquin, or Tonquin, according to Richard, signifies the court of the east, because, during the greatest extent of the Chinese empire, this country, then a province, was regarded as an imperial residence. But certainly in this case Tunquin ought rather to have been styled the court of the west, from its position with regard to China. The natives call their country An-nam, which signifies the repose of the south.

On the east and north it is bounded by China; on the south by Cochin-China; on the west by the kingdoms of Laos and *Bowes*, or Baos, the latter unknown in geography.

The climate is not extremely hot. It is healthy and temperate from the month of September till March: in January and February the weather is cold, but neither snow nor ice are seen, and hail is extremely rare. The temperature of the air becomes rather unhealthy in the months of April, May, and June, which is the season of fogs and heavy rains; and great heat is felt in July and August. These heavy rains produce great inundations, and boats are used in passing from village to village. In the flat country, and even in part of the mountains, the winds regularly blow six months from the north, and the like time from the south; the first beginning in October.

This kingdom is considered as divided into eleven provinces, that of the North

[1] Pennant Outlines, iii. 76.

being

being the largest, bounded by Laos on the west, China on the east and north, and the kingdom of Baos on the north-west.

A navigable river, called Songkoy, traverses the kingdom from north to south, receiving other streams which are partly navigable; and there are numerous canals for the cultivation of rice.

In the gulf of Tunquin is a small isle, which is said to produce the musk animal; and in the vicinity is a pearl fishery. The chief entrance of the river, called Domea by the Europeans, has a bar which embarrasses the navigation, so that a native pilot becomes necessary.

This country, in general, may be regarded as divided into two portions, the mountainous and the plain. Towards China, Cochin-China, and Laos, are extensive mountains, partly covered with forests, but neither rocky nor precipitous. Here are found mines of gold, silver, and iron; and our author adds, of yellow, red, and black copper, greatly esteemed in the country; probably confounding the colour of the ores with that of the metal.

The lower part of Tunquin greatly resembles Holland, a country half land and half water, by the number of its canals and dykes, and by the numerous rivers and lakes. The province called of the West is watered by seven great rivers, which unite about fifteen leagues above the royal city, forming a kind of sea, or great lake, which again sends out various branches. The southern part of the kingdom, though in the torrid zone, super-abounds with waters, covered with boats.

The population is said to be very great. There are few towns, but many villages, so near each other as to form, as it were, a series of habitations; and some are said to contain not less than a hundred thousand inhabitants, which probably an actual enumeration would reduce to one-third.

The only city which deserves that name is Kacho, or Kecho, the capital of the kingdom, and the royal residence, situate upon the river San Koy, about forty leagues from the sea, and about 21° of north latitude. In size it may be compared with the most celebrated cities of Asia, and may at least equal that of Paris. On the first and fifteenth day of every moon are held great markets, which attract most of the inhabitants of the surrounding towns and villages to a considerable distance. The crowd is then so immense that, though the streets be very wide, it becomes difficult to advance a hundred paces in half an hour. Yet great order prevails, each merchandise and village having distinct streets for the exposition of their articles. The streets are partly paved with brick, except some parts which are left for the passage of horses, elephants, and the king's carriages. Two-thirds of the houses are of wood, others of brick, among which are the factories of foreign merchants, distinguished amidst a multitude of huts constructed of bamboos and clay.

The palaces of the Mandarins, and the public buildings, which occupy great spaces of ground, are chiefly built with wood; but in a more neat and solid manner than the common houses, the materials being choice, strong, well wrought, and decorated with sculptures and paintings. The chambers are neatly disposed; and the roof consists of tiles of different colours.

The common houses are composed of a roof, placed on wooden columns, commonly covered with straw, reeds, or large leaves of trees, which will last thirty or forty years, if no accident happen. These houses, without cielings or stories, are merely divided by partitions, and have only a ground floor; for it would be a crime against the state to build a house of a certain height: the numerous windows are covered with gauze, or fine matting, glass being almost unknown. This light construction being very liable to fire, the police only permits it to be lighted during certain hours of the day.

The

The trade is very considerable; and the great river is crowded with barks and boats, bringing the merchandize of the provinces to the capital. Each boat pays about two-pence for the right of anchorage, and this small tax forms a considerable revenue.

The royal palace occupies a considerable space in the fairest quarter of the city; but is little superior in architecture to the residences of the Mandarins. Access is difficult, but it appears to be constructed on the Chinese plan of detached houses and pavilions, situate amidst groves, gardens, and canals. The women and eunuchs never quit its precincts. Before the recent revolution, the triple walls of the ancient city and palace, the courts paved with marble, and other features of grandeur, displayed one of the most beautiful and vast edifices of Asia; for, according to our author, the circumference of the palace and gardens was from six to seven French miles*.

At present the capital is only defended by a quick hedge of bamboos. In the neighbourhood is quartered a body of soldiery; the arsenal and other magazines of ammunition being on the banks of the river. On the other side is the Chinese town, established by precaution: nor are other strangers allowed to enter the city without a special permission.

After the capital, Hean is the most considerable town, containing more than two thousand houses, and, situated on the right bank of the river, four or five days' journey from its entrance into the sea. Formerly the French had a factory here, and the trade was considerable, as Hean is only at the distance of two days' sail from the royal city.

At five or six leagues from the mouth of the river is another town, called Domea, a great deal less than Hean, but well known to strangers, who are not now permitted to proceed further up the river.

These towns, as well as most of the villages, are surrounded with live hedges of bamboo. Individuals of easy fortune inclose their house and garden in like manner; which, with the alleys of areca trees, present an agreeable prospect, like that of a park with mingled houses and gardens.

The high roads are maintained at the public expence; but, though raised as in Holland, are scarcely passable in the wet season. The rich use horses, or litters carried by men. Bridges are rare, chiefly from precaution in time of war.

In the mountains, the houses are irregularly disposed, according to the convenience of the ground; and the people almost savage.

Rice is the chief product of agriculture; and in the low country yields two harvests yearly, but in the high lands only one, as the rainy season must be awaited. The rice is of different colours, yellow, red, white, and black; there is even one kind which has an agreeable smell, and which is used, in preference, for the offerings to the idols. All these sorts are eaten; but the kind used to make arrack, being difficult of digestion, is a resource of necessity.

The rivers and canals abound with fish of various kinds, contributing largely to the support of the inhabitants; but wheat and wine are unknown, though the vine would probably thrive on the sunny side of the mountains. The mulberry tree is common, and silk in general use, even among the poorest people. The sugar cane is indigenous, but the art of refining the juice is unknown.

The agriculture is of the simplest kind, the plough being composed of three pieces of wood, a pole, a handle, and a third, almost at right angles with the last, to open the ground, all simply fixed with straps of leather. This plough is drawn by oxen or buffalos. The horses are small, but lively and robust; yet the inhabitants rarely use them, as they prefer travelling by water. Asses and sheep are unknown, and the goats are few; but there is an abundance of swine, and their flesh is well flavoured and whole-

* Richard i. 37.

some.

some. The people seem little delicate, as they eat dogs, cats, and rats. Poultry, ducks, geese, abound, and are even found wild in the forests. Here, as in China, the eggs of ducks, by being heated in ovens, produce the young, which swarm in the numerous canals and ponds.

The forests of the mountainous provinces contain deer, boars, peacocks, a peculiar kind of partridge, quails. The tigers are very dangerous, some being from eight to ten feet in length; and of such strength as to carry off the largest buffalo. When they have long wanted food, their ferocity becomes terrible; one has been known to enter a town, destroy eighty-five people, and retire from mere fatigue, as, by a singular law, the use of fire-arms was forbidden, except in war.

The wild elephants are also very dangerous, as they sometimes overturn houses, and destroy the inhabitants; apes of every rank, condition, and quality, may also be found in these forests; and some, according to popular report, are from six to seven feet in height. These animals, and the parrots, are not a little destructive to the rice and fruits.

The manners of the people, in general, are less civilized than those of the Chinese; and the frequent revolts and conspiracies are rather occasioned by credulity and superstition, than by any hopes of improving their situation by a change. The Tunquinese in general, are of a middle stature, with broad faces, but not so flat as those of the Chinese; the eyes and nose small, and long black hair. The men have little beard, and do not shave. There are few deformed people; and the women are rather handsome. The complexion of people of rank nearly approaches that of the Portuguese and Spaniards. At the age of seventeen or eighteen they begin to blacken their teeth, regarding white teeth as the praise of dogs: like the Chinese they suffer their nails to grow, but this fashion is confined to the Mandarins, the men of letters, and other distinguished persons. The ladies tinge their nails with red; and, upon select occasions of love or enticement, the hands and feet are slightly dyed with that colour, as usual as among other eastern nations.

The dress of the men consists in a piece of silk, several yards in length, wrapped about the loins, and a long robe with loose sleeves, which is thrown off in travelling, or during labour. The women of the lower orders are modestly clothed in a long petticoat and one or more robes of the same form as those of the men, but shorter. They cover their bosoms with a piece of linen or silk, in the form of a heart, which serves them as an ornament, having no necklaces, though they wear ear-rings, and bracelets of gold or silver. They commonly appear with naked legs and feet, like the men; but rich and dignified persons wear long drawers. The most general colour is white, that is to say, the natural tint of the silk or of the linen. Black is only worn by people of distinction, and in the palace approaches to an obscure violet. The men and women fasten their hair in a knot behind the head; but in the presence of any superior they let it fall as a mark of respect.

The people are not only indolent, but loaded with heavy taxes, among which is a capitation from three to six rix dollars a-year. They are also obliged to perform public services, which, with the artisans, occupy about six months in the year.

The learned language is that of China, but in the popular mouth it degenerates into a kind of dialect, which cannot be understood by a Chinese. The words are all in single syllables; and the same word expresses different things, according to different accents and enunciations.

The right of primogeniture predominates, and daughters share little in the estate of their father. Marriage is contracted without priest or magistrate, the consent of the parents forming the sole ceremony. The husband may repudiate or sell his wife, which last circumstance is not rare when a good price is offered; but the wife cannot quit the husband without his consent. Polygamy is common, and favoured by the

women themselves, who look upon the support of a man as indispensable. Divorces though free, are very rare. Children are not exposed as in China, there being, for the most part, rich people to adopt or nourish them. The accumulation of usury renders the state of debtors very perilous; and the inhumanity of creditors sanctioned by laws, enacted by the rich for their own benefit, often equals that of ancient Rome, or modern England.

Though the Tunquinese manners be in a great degree formed upon the Chinese model, yet the women in general have more freedom and choose their own husbands. Strangers for a very small reward obtain temporary marriages. As in China the greatest use is made of day light: and the ceremonies of the court commence at a very early hour. A custom of abominable singularity prevails among this people, that is of putting, if possible, some person to death at the beginning of a new year: with this view they then poison the fowls and fruit which they bring to market: and while the examples are frequent, the punishment is rare. They have an idea that this atrocity will bring them good fortune; and it probably indicates the ancient use of human sacrifices. Plays, dances, and cock-fighting, form the chief amusement.

The general food is rice, seasoned with a kind of sauce called Balachan; but pork is also in request. But the food in general is so various as to include the horse and the elephant, certain worms and bees, and the eggs of a kind of ants; but butter, milk, and cheese, are held in detestation. The nest of the species of swallow, commonly eaten in China, are here also held in great esteem. They are formed of some gelatinous substance, which the birds find in the sea, and are common in many of the Asiatic islands and Cochin-China. The chief drink is derived from a kind of coarse tea, but arrack is also in great request.

Among the maladies of this country there is a dreadful kind of leprosy, which devours the extremities of the hands and feet. In other respects the climate is healthy, and the few diseases easily cured. The funeral ceremonies bear a great resemblance to those of China; pieces of gold or silver, or sometimes small pearls, are put into the mouth of the dead, that they may not enter poor into another world. The place of sepulture is carefully chosen, but not upon the mountains as in China.

Their religion resembles that of the Chinese, but the sect of Foo is in the greatest favour. Every town or village has a tutelary genius, or peculiar patron. Sometimes as in ancient Egypt the supposed genii are vile animals, as serpents, dogs, cats, oxen, fish; but more frequently men who have deserved well of their country. The natives are also not a little addicted to magic.

The sciences, as in China, are chiefly sought in the writings of Confucius and his commentators; the principal branches being morality, mathematics, physics, and astronomy, with the laws and history of the country. Knowledge is in great consideration in Tunquin, because it is the only way of procuring honours; and the men of letters are regarded as the sole nobility of the kingdom. They must pass by different degrees to arrive at their proposed object, the offices and dignities of the state, which are all recompenses of literary merit. There are, as with us, three degrees, the highest being that of doctor, and the skill estimated by a short composition, in which the elegance of the thoughts and expressions is carefully examined, as well as the solidity of the reasoning. Hence though the candidates may amount to thousands there are rarely more than eight or ten admitted. Amidst this attention to the choice of people, capable of filling the first dignities of the state, and who are regarded as its chief support, it is difficult not to select the most worthy. Any corruption or intrigue is, when detected, punished with death.

Foreign languages are not studied; but the king has some interpreters for the languages of the neighbouring states, and the Portuguese, a corrupted dialect of which latter forms the commercial speech of the Asiatic shores. Printing is known, as in China;

but painting and sculpture are in a very low condition. The tools of the workmen are few and simple, yet they labour well and expeditiously.

The chief trade is with China, which supplies Tunquin with fine teas, porcelain, various silks and painted linens, prepared sugars; with wheat and barley, flour, kitchen utensils, iron, spices, flax and lint, wax, cotton, glass, and toys. The Chinese workmen are also highly esteemed in this country, and maintain their ascendency not less by their cunning than by their abilities. The Chinese vessels have many privileges, which the English also enjoyed until the year 1730, when the captain of a vessel attempting to smuggle some copper, their privileges were restricted. Strangers export from Tunquin varnish, silk raw or wrought, chiefly strong stuffs, beautiful cloth, resembling linen, made of the bark of trees, different works of mother of pearl, which the workmen of the country know how to employ to the most advantage, ebony, ivory, tortoise shell, cinnamon, copper, cotton, and several other articles. Calamine is also exported from Tunquin by the Dutch, and carried to Japan, where it is used to convert copper into brass.

The interior commerce of Tunquin is very considerable, consisting chiefly of fruits of different kinds, silk and cotton cloths, with those made of the inner bark of the paper bearing mulberry. The cinnamon of Tunquin would be a profitable article, if duly cultivated. The forests are full of it, but it is only cultivated in the king's gardens, and those of the temples, as it is an article of royal monopoly. The colour is rather grey than red, that of the finest cinnamon of Ceylon; it is also thicker and rougher, and possesses less odour. The tree which produces the varnish is from twelve to fifteen feet high at the most, eighteen and twenty inches in circumference; the bark is white, and the leaves resemble those of the wild cherry. It distils a juice resembling turpentine, and the produce is increased by incisions. Precaution is required in gathering the varnish, as it is rather of a poisonous quality something resembling the Toxicodendron of America. The varnished goods are only thought to yield to those of Japan, and that solely in the superior quality of the Japanese wood. Sugar, as already observed, might likewise form a considerable article in commerce, if the natives knew the various preparations.

Paper is also a considerable article, being chiefly made of the bamboo reduced to a liquid paste, and afterwards treated as in our paper manufactories, allum water being used to render it more firm and smooth. Paper is also drawn from the mulberry, the elm, the trunk of the cotton tree, and in general from all kinds of white and sappy woods. Salt procured from the sea water also forms a great article of interior commerce.

Although Tunquin was anciently a part of China, and though there remain vestiges of towns and forts built by the Chinese, yet the natives have always been regarded as a distinct people. The connection with China is still maintained by solemn embassies, which are received with great pomp by the artful Chinese, merely to impart a higher idea of their own ascendency. The power, as in Japan, was divided between two princes, ecclesiastic and secular; the former being here styled the Dova, and the latter, who possesses the real authority, the Chova. As usual an able general seized on the royal authority, for a prince who does not lead his own forces to the field can very seldom long retain a throne. The court of the Chova was very pompous and brilliant, assembling commonly about six o'clock in the morning. But the number of eunuchs rather proclaimed the weakness than the power of the monarchy; and the court was often distracted with the intrigues of these animals and of the women. The Harem contains about four hundred concubines: she who produces the first boy receives the most distinguished honours. On the death of a Chova his successor commonly neglects his younger brothers to such a degree, that some have been known to serve as porters in the markets. A rebellion in 1748 had nearly restored to the Dova his ancient authority.

It is said that the troops amount to about a hundred and forty thousand, of which about eight or ten thousand are cavalry. There were formerly counted three hundred and fifty elephants; but the use of fire arms seems to have diminished the consideration of these animals in war. Since the revolution in Cochin-China, where the Chova rendered himself independent of Tunquin, and assumed the royal title, a body of ten thousand men has been stationed on that frontier. Every governor of a province has at his disposal seven hundred men, and one elephant. The remainder of the forces, amounting perhaps to a hundred thousand, is placed in the royal city, or in an adjacent camp. Though the kingdom be open on all sides, yet it has no cause to fear its neighbours, Laos being a tributary realm, and China preferring an advantageous trade to an evanescent conquest.

The arms of the Tunquinese are the ancient musquet fired with a match, the modern firelock being there unknown, bows, sabres, pikes, and half pikes, and a defensive buckler. There is no regular uniform except in those of the king's household, who are clothed in blue or red. They are however esteemed among the best troops of the east. The navy amounts to about two or three hundred gallies only navigated with oars, and more adapted to the rivers of the country than to the open sea.

The king of Tunquin is reckoned among the rich sovereigns of the east, having valuable treasures and an ample revenue. A considerable part consists in rice, sometimes preserved in the magazines for thirty or forty years, rice being capable of longer conservation than any other grain. In the last century a tax was laid upon land, which was almost ruinous to the people. The capitation tax is far more ancient, and is paid by all the males from the age of twenty to that of sixty, excepting only the soldiers, the keepers of the temples, and the Bonzes. A considerable revenue is also derived from the sale of dignities; and from the duties of merchant vessels amounting to about a tenth of the merchandise.

The laws, like those of China, are founded on the single principle of paternal authority, and filial obedience; the monarch, and the various magistrates, being respected as fathers, while, on their part, they are taught to cherish the people as their children. The various magistrates of Tunquin, like those of China, are by the Europeans denominated Mandarins, from the Portuguese word *Mandar*, signifying to command. But this word has never passed into the native languages, in both of which the word is Quan. The importance of the situation decides the dignity of the Quan, as with us the mayor of London is superior to the mayor of a village. This title is also constituted into a mere personal dignity, at the caprice of the sovereign, but there is no hereditary nobility. The tenure of lands, and the right of inheritance, are important objects, left in too much obscurity even by the authors who describe the Chinese empire; but it is believed, that the estates being divided, property is never permitted to accumulate or to assume any dangerous influence. It is however in general respected even by the sovereign, if he be not of a despotic disposition; and among the tribunals established in the capital, there is one which pronounces on the difficulties with regard to successions in land, as there is another who judges of those regarding houses and personal property. The judges are, however, very corrupt, and think justice too valuable an article to be gratuitously distributed. The military and civil offices are generally venal, though, to obtain the latter, a man of letters must have passed the necessary degree. Executions are rare, and do not exceed twenty or thirty, in the course of a year, throughout the whole extent of the kingdom. Decapitation is regarded as ignominious; princes and great persons have the privilege of strangulation. Female criminals are trampled to death by elephants. The dignity of public executioner is hereditary. Other punishments are exile, perpetual imprisonment, and personal chastisement, sometimes with the mutilation

of a finger or an ear. The prisons are in a shocking state, and require the interposition of some oriental Howard.

On a general view of Tunquin, the country and the despot are extremely rich; and the people very poor.

Soon after the commencement of the seventeenth century, the Jesuits attempted to establish the Christian faith. The chief obstacle here, as in all oriental countries, was and is the dogma of monogamy, totally repugnant to the feelings and customs of these nations; and if this doctrine cannot be modified by a general council, the laws of Mahomet will always extend their influence in the east, while Christianity suffers a constant and palpable decline. The interference of the missionaries in political affairs also contributed, as usual, to their want of success. In 1712, an edict was published against the Christians, who began to be persecuted with great rigour. Another persecution arose in 1737, which lasted with intervals until 1751, when the monarch happening to see some cannons, (not those of the church,) adopted an idea that the Jesuits might be useful officers of artillery; and four were accordingly invited from Macao. Yet, in 1773, two Christians were executed, on account of their religion, in the capital city; and Christianity holds a most uncertain tenure in this despotic country. In the adjacent kingdom of Cochin-China the Christian faith appears to gain more protection, as appears from a royal edict of 1775, in the following terms.

"Bo-siuh, secretary of the king, and of the supreme council of the kingdom, announces by royal order to all the inhabitants, the following edict:"

"The king orders all the commanders, and other chiefs of his kingdom, to set at liberty the Christians who have been employed in keeping elephants, and other mean offices in his armies, because they have not abjured their religion, nor trampled under foot the idols permitted by their faith. Wherefore he enjoins the supreme council to publish this edict, in all his provinces, and to send it to all the governors and commanders, that it may be known by all the inhabitants of the cities, towns, and villages. It is besides his will, that the governors of provinces, or others there in authority, shall each in his department, and as soon as possible, make an exact enumeration of these captives, and take care to send a list to the king, who desires to have personal knowledge that his orders have been executed. Finally commanding, that the Christians above designed, after having been set at liberty, shall appear before the supreme council itself, as well to testify their gratitude to the king, as to prove that the governors have executed his orders *."

The description of the various kingdoms of exterior India being thus completed, as far as the present design and the imperfect materials would admit, the geographical progress must return to the westward, and discuss the wide regions of Hindostan, a difficult but interesting theme.

* Richard II. 346.

HINDOSTAN.

INTRODUCTION.

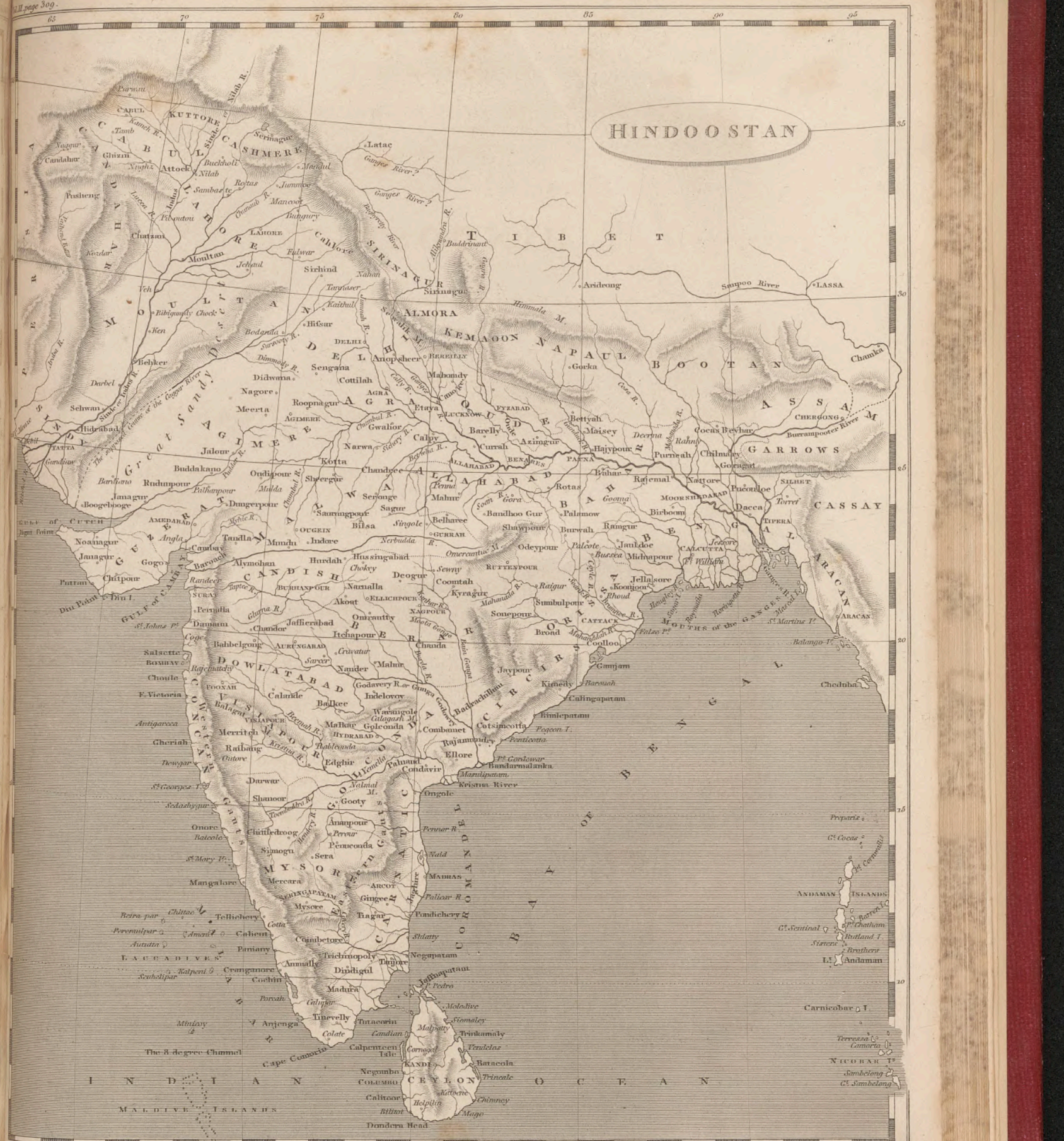
General Observations. — Arrangement. — Natural and Political Divisions.—Plan of the present Description.

General Geography.] THE description of this interesting portion of Asia is not a little difficult, from its vast and irregular extent, from the want of grand subdivisions, from the diversity of nations and powers, large foreign settlements, and other causes, so that the first object must be to determine a clear and natural arrangement. Far from being impressed with this circumstance, geographers seem desirous to increase the embarrassment, by including the regions called India beyond the Ganges, whence the confusion becomes more confounded.

Mr. Pennant, who often excels in geographical delineation, has, in his view of Hindostan, been contented with the vague divisions of Western, Eastern, and Gangetic, or that part which is pervaded by the Ganges and its tributary streams. His description is also in the form of an itinerary, of all others perhaps the least adapted to general geography. Major Rennel, to whom we are indebted for an excellent map and memoir, which have thrown great light on Indian geography, first considers the sea coasts and islands; as, in the construction of a map, the outline of the coast is the earliest object. He then describes Hindostan in four other sections: 1. That part occupied by the Ganges and its principal branches: 2. That occupied by the course of the Sindé, Sindeh, or river Indus: 3. The track situated between the river Kistna and the two former divisions: 4. The countries to the south of the Kistna, or what is perhaps improperly called the southern peninsula, as no part of Hindostan can be styled a peninsula, in the modern acceptation of being nearly surrounded by the sea, and if we introduce proximity of rivers, the number of chersoneses might appear infinite.

It might seem that an easy arrangement would arise from dividing Hindostan into the four points of Eastern, Northern, Western, and Southern: but in this process the Northern could not be well separated from the Western, as both are connected by the course of the Indus, and the deficiency of natural boundaries must be supplied by arbitrary and imaginary lines.

General Division.] After long consideration, the general plan adopted by Major Rennel seems the best, not only in itself, as was to have been expected from his profound acquaintance with the subject, but as having the advantage of being familiar to the public, from the widely diffused reputation of his work. Amidst the want of important ranges of mountains, rivers alone can be assigned as natural divisions; and as



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as in Hindostan they do not form limits, the countries pervaded by their courses and tributary streams may be considered as detached by the hand of nature. Hence the Gangetic part of Hindostan, to use Mr. Pennant's term, includes the space from the confines of Tibet to the sources of the Chumbul and Sippra, and from the mountains near Agimere and Abugur hills, to the most eastern boundary of Hindostan.

That portion watered by the Sindé or Indus, and its subsidiary streams, may in like manner be termed Sindetic Hindostan; as a supplement to this division may be considered the country of Sirhind, and other tracts to the west of Gangetic Hindostan.

The southern part is encompassed by the sea, except on the north, where the river Kistna and its subsidiary streams form the boundary. In ancient times this portion was styled Deccan, a native term implying the south. But the Deccan of the Hindoos extended twice as far in a northerly direction, even to the river Nerbudda; so that it would in fact, with the Gangetic and Sindetic divisions, nearly complete the whole of Hindostan. The term Deccan is therefore here used for the portion to the south of the Kistna.

That portion on the north of the Kistna, reaching to Gangetic Hindoston on the north and east, and the Sindetic with its supplementary provinces on the north and west, may be styled Interior or Central Hindostan *.

In this arrangement the Gangetic part will include Bengal, Bahar, Allahabad, Oude, Agra, and a part of Delhi and Agimere. The Sindetic contains Kuttore, Cashmir, Cabul, Candahar, Lahore, Moultan, and Sindé.

The Central division represents Guzerat in the west, with Candeish, Berar, Orissa, the Sircars, the chief part of Golconda, Visiapour, Dowlatabad, and Concan.

The southern division includes a small portion of Golconda, Mysore, the extensive region called in modern times the Carnatic, with Madura, and other smaller districts, the western coast being called that of Malabar, and the eastern that of Coromandel. In this part is naturally included the island of Ceylon.

Political Division.] The next topic to be considered, in a general view of Hindostan, is its political situation as divided among various powers. Of these the English is at present preponderant, not only from European tactics, but from an actual extent of territory at least equal to that of any native power. To our former wide possessions in Gangetic Hindostan, with a large portion of the eastern coast from below the estuary of the Kistna to the lake of Chilka, and the detached government of Madras, have been recently added extensive regions in the south and west of Mysore, with Seringapatam the capital, not to mention Bombay, and other detached establishments. And the large and important island of Ceylon has been wrested from the Dutch. The province of Cuttac, acquired in the late war against the Maratta chiefs, almost unites the S. W. of Bengal with the northern Sircars.

Next in consequence are the Maratta states, chiefly contained in the central division of Hindostan.

The Nizam, or Soubah of the Deccan, our firm ally, has considerably enlarged his territory in the south at the expence of Tippoo; the central part of whose dominions, except Seringapatam, is subject to the Raja of Mysore, a descendant of the race dethroned by Hyder, an usurper.

* If scientific geographers had the privilege, usurped by travellers and mariners, of imposing new names and divisions, the above partitions might be styled in native terms Gangestan, Sindestan, while Deccan might be confined to the southern part, and some native word applied to the middle or centrical division. Major Gore Ousely informs me, that the countries bordering on the Sindh, or Indus, are actually called by the natives *Sindhwári*, meaning literally the borders or banks of the river Sindh.

The

The British, the Marattas, and the Nizam, may be regarded as the three leading powers, to which may be added on the west, or on the Sindetic division, the Seiks, and Zemaun Shah, or whatever prince holds the eastern division of Persia.

The following table, extracted, with a few alterations, from Major Rennell's memoir, will convey a more complete and satisfactory idea of this important topic.

I. BRITISH POSSESSIONS.

1. Bengal and Bahar, with the Zemindary of Benares.
2. Northern Sircars, including Guntoor.
* 3. Barra-Mahal, and Dindigul.
4. Jaghire in the Carnatic.
* 5. The Galicut, Palicaud, and Coorga countries.

II. BRITISH ALLIES.

1. Azuph Dowlah. Oude.
2. Mahomed Alli. Carnatic.
* 3. Travancore, and Cochin.

III. MARATTA STATES.

POONA MARATTAS.

1. Malwa.
2. Candeish.
3. Part of Amednagur, or Dowlatabad.
4. Visiapour.
5. Part of Guzerat.
6. ——— Agra.
7. ——— Agimere.
8. Allahabad.
9. Shanoor or Sanore, Bancapour, Darwar, &c. situated in the Dooab, or country between the Kistna and Toombudra rivers.

TRIBUTARIES.

1. Rajah of Jyenagur.
2. ——— Joodpour.
3. ——— Oudipour.
4. ——— Narwah.
5. ——— Gohud.
6. Part of Bundelcund.
7. Mahomed Hyat. Bopaltol.
8. Futty Sing. Amedabad.
9. Gurry Mundella, &c. &c.

BERAR MARATTAS.

1. Berar.
2. Orissa.

TRIBUTARY.

Bembajec.

IV. NIZAM ALI SOUBAH OF THE DECCAN.

1. Golconda.
2. Aurungabad.
3. Beder.
4. Part of Berar,
5. ——— Adoni, Rachore, and Canoul.
6. Cuddapali. Cummum (or Combam) and Gandicotta (or Ganjecotta).
7. Part of Gooty, Adoni, and Canoul.
8. Part of the Dooab.
[9. Other districts acquired in 1799.]

V. SEIKS.

Lahore, Moultan, and the western parts of Delhi.

As the other great power chiefly extends over Persia, and may be regarded as foreign, it only remains to mention the small states.

1. Successors of Zabeda Cawn. Sehaurunpour.
2. Jats.
3. Pattan Rohillas. Furruckabad. Rohilcund.
4. Adjig Sing. Rewah, &c.
5. Bundelcund, or Bundela.
6. Little Ballogistan.

To which may now be added the Raja of Mysore.

* The countries thus marked, are acquisitions from Tippoo Sultan under the late treaty of Seringapatam. To which must now be added Coimbetore, Canara, and other districts acquired in 1799. See Rennell's Supplementary Map, dated the 5th April 1800.

The

The British possessions prior to the fall of Tippoo, 1799, were supposed to contain 197,496 square British miles, being about 60,000 more than are comprized in the united kingdoms of Great Britain and Ireland: the number of inhabitants was computed at ten millions. The acquisition in 1799 probably adds 15,000 square miles, and the population subject to Great Britain is supposed to be 12 or 14,000,000 [1]. The net revenue exceeded three millions before the cessions by Tippoo in 1792, computed at 400,000l.; while those in 1799 do not appear much to exceed half that sum. This great power and revenue of so distant a country, maintained in the midst of a highly civilized foreign nation, is perhaps unexampled in ancient or modern times.

The Marattas are divided into two states or empires, that of Poona or the western, and Berar, or the eastern; each ruled by a number of chiefs, or princes, who pay a nominal obedience to the Paishwa, or Sovereign. An account of the Marattas belongs to the central division of Hindostan. The Seiks, a new religious sect, first appeared in the middle of the seventeenth century, and have gradually become formidable to the neighbouring states. The Jats, or Jets, were a tribe of Hindoos, who about a century ago erected a state around the capital Agra. The Afghans, another peculiar people, originated from the mountains between Persia and India.

Before closing these general considerations with regard to this extensive country, it may be proper to observe that the name of Hindostan has been considered as synonymous with the empire of the Great Mogul. But the power of the Monguls, which commenced under Baber, 1518, was most eminent in the northern parts, the Deccan, or south remaining unsubdued till the time of Aurungzeb, 1678, when that region, with what is called the peninsula *, a few mountainous and inaccessible tracts only excepted, were either vanquished or rendered tributary to the throne of Delhi [2]. When Aurungzeb died in 1707, in his 90th year, the Mongul empire had obtained its utmost extent from the 10th to the 35th degree of latitude, (about 1750 British miles); and about as much in length: the revenue exceeding thirty two millions sterling, in a country where provisions are about four times as cheap as in England. The number of his subjects may be computed at about sixty millions. But this great power declined so rapidly that, within fifty years after his death, it may be said to have been annihilated, and the empire of the Great Mogul has vanished from modern geography.

PLAN.] The plan to be pursued, in the subsequent brief account of Hindostan, has been above indicated as divided into four parts; the regions on the Ganges; those on the Indus; the centrical, and the southern. In three of these divisions the British possessions are powerful, if not predominant; and it is difficult to connect the political with the natural geography. Doubts may justly arise whether the British territories ought not to form a separate and distinct portion in a perspicuous arrangement, this being another of the peculiar difficulties which attend the geography of Hindostan. But as the grand mass of the population in these settlements consists of native Hindoos, and the natural geography of the country must not be sacrificed to any extraneous consideration, it still seems preferable to abide by the division already laid down. If indeed the political geography were preferred, in describing this vast portion of Asia, any such arrangement would prove of a most fleeting and temporary complexion, as the revolutions and variations are so frequent and rapid. Hence that form of description must be chosen, which, resting on the perpetual foundations of nature, cannot be injured or obliterated by the destinies of man.

[1] Sir William Jones says 30,000,000. Is not this an orientalism?

* Is not this absurd term of peninsula, which Major Rennell justly blames, derived from Guthrie, or De la Croix?

[2] Rennell's Memoir, page lxi.

These considerations being premised, a similar arrangement shall here be followed in describing Hindostan, a labyrinth of eastern geography, with that used in delineating Germany, that labyrinth of European geography. A general view of the whole region shall be followed by successive chapters on each of the above divisions; in which the several states, chief cities, and other geographical topics, shall be briefly illustrated.

CHAPTER I.

GENERAL VIEW OF HINDOSTAN.

Name.—Boundaries.—Original Population—Progressive Geography.—History.—Chronology.—Historical Epochs.—Ancient Monuments.—Mythology.—Religion—Government.—Laws.—Population.—General Revenues.—Political Importance.—Manners and Customs.—Languages.—Literature.—Ancient Civilization.—Universities.—Inland Navigation.—Manufactures.—Native Products.—Climate and Seasons.—General Face of the Country.—Soil.—Rivers.—Lakes.—Mountains.—Desert.—Forests.—Botany.—Zoology.—Mineralogy.—Mineral Waters.—Natural Curiosities.

NAME.] THE native name of this celebrated country is said to be in the ancient Sanscrit language Bharata[1]. That of Hinsdotan seems to have been imposed by the Persians, and derived, like the classical name India, from the great western river with the Persian termination *Tan* or *Stan* which signifies a country*. It was long known, as already mentioned, by the name of the Empire of the Great Mogul, because it was then subject to Mongul emperors, successors of Timur.

BOUNDARIES.] This portion of Asia extends from cape Comari, called by navigators Comorin, in the south, to the mountains which form the northern boundary of Cashmir; that is, according to the most recent maps, from about the eighth to about the thirty-fifth degree of northern latitude, being twenty-seven degrees, or 1620 geographical miles, nearly equal to 1890 British. The northern boundary may be yet further extended to the Hindoo Koh, and mountains running E. and W. on the north of the province of Kuttore.

From the river Araba, on the west of the province of Sindi, to the mountains which divide Bengal from Cassay and the Birman dominions, that is from about the sixty-sixth to the ninety-second degree of east longitude from Greenwich, there are 26°, which in the latitude of 25° constitute a breadth of more than 1400 geographical miles, or 1600 British. Comparatively, if we exclude Scandinavia, the former kingdom of Poland, and the Russian empire, the extent may be considered as equal to that of the remainder of Europe.

The boundaries are marked on the north by the mountains above-mentioned. On the west, towards Persia, other ranges and desarts constitute the frontier till the southern separation end in the river of Araba. The other boundaries are supplied by the Indian Ocean, and Bay of Bengal, where the eastern extremity is limited by the little river Naaf, and those mountains which divide the British possessions from Aracan, Cassay, and Cashar. The northern boundary generally consists of the southern ridges of the Tibetian Alps. On the N. E. of Bengal a similar ridge divides Hindostan from the small territory of Asam, which seems an independent state, never having

[1] Rennel, xx. froun Wilkins: but the proper native term seems to be Medhyama, and Bharat was the first king. As. Res. i. 419.

* As the word is *Hindustán*, I rather incline to think it from *Hindu* and *Stan*, or the country of Hindoos, as Afghanistan, Curdistan, Parsistan, &c.—Ouseley.

formed a portion of Hindostan, of dubious connection with Tibet, and as yet unsubdued by the Birmans*.

ORIGINAL POPULATION.] The original population may be generally considered as indigenous, or in other words peculiar to the country. Yet in so extensive a region, and amidst the great diversity of climate and situation, the native race presents considerable varieties, especially as being fairer in the northern parts, and in the southern almost or wholly black, but without the negro wool or features†. Still the tinge of the women and the superior classes is deep olive, with sometimes a slight and agreeable mixture of the ruddy, and the Hindoo form and features may be said to approach the Persian or European standard, The sole ancient conquests of Hindostan having proceeded from the N. W. and West, there may be some slight admixture of the Persians, of the Greeks of Bactriana, of the ancient Scythians, who appear to have proceeded from Imaus, and to have held a considerable country on the Indus, being the Indo-Scythæ of antiquity. More recently Mahmud of Ghizni, introduced a group of Mahometans of various origins. The Patans, or Afghans proceeded from the mountains towards Persia, being asserted to be a tribe of Albanians who emigrated to the eastward‡. The Monguls are well known to have included many Tatars, and Mahometan tribes from the east of the Caspian. These, with the Arabs and Persians, are generally called Moors.

PROGRESSIVE GEOGRAPHY.] The progressive geography of Hindostan may be said to begin with the victories of Alexander the Great, for the fables concerning Sesostris and Bacchus deserve no attention; and though the Persians appear to have made early conquests, and to have possessed no small knowledge of India, yet their science was lost to civilized Europe. After the age of Alexander many Greek and Roman authors, particularly Strabo, Arrian, and Pliny, have left information concerning the state of India. One of the most important ancient records is the description and map of Ptolemy, but they are so much distorted as to embarrass the most learned enquirer. Far from representing India in its just form, as stretching far to the south, he supposes the ocean to flow from the gulph of Cambay, almost in a line to the lake of Chilka, thus immersing under the waves a third part of Hindostan. At the same time he assigns to the island of Taprobana, or Ceylon, an enormous and fabulous extent. This, the most singular error of his whole system, has been attempted to be explained by M. Gosselin[a], who supposes the Taprobana of Ptolemy is the Deccan, or southern part of Hindostan, from Surat to cape Comorin, a strait being supposed to pass from the gulph of Cambay to the eastern shore of Orissa; and he infers that some of the ancients believed in this strait. The idea is ingenious, and ably illustrated, yet is far from being satisfactory. 1. Ptolemy's map of Taprobana is a tolerably just representation of Ceylon; and the numerous islands which he places near it are the Maldives; which, in a fair acceptation of his sense, must have been much

* A description of Asam may be found in the second volume of the Asiatic Researches, page 171, octavo edit. and some idea of thisconntry will be given in the account of the river Burrampooter, which will follow that of the Ganges.

† Yet even in speaking of Bengal Sir William Jones terms the natives *blacks*. He says, As. Res. IV. xxiii. that in Hindostàn there are not less than thirty millions of *black* British subjects.

‡ The Avghans, or Afgans, pretend that their founder removed from the mountains of Armenia to those of Candahar. Colonel *Gaerber* takes it for granted that the Affghans whom he found near Derbent, were descendants of the Albani; and Dr. *Reineggs* contends that the names of the two people are in fact the same. The Armenians (says he) cannot pronounce the Letter L in the middle of a word, but call the Albans Agvhans, as they call Kalaki, Kaghaki, &c. Ellis's Memoir, page 6. Sir William Jones, As. Res. ii. 76, warmly recommended an enquiry into the history of the Afgans, and says that their language resembles the Chaldaic. It should be compared with that of the other Caucasian tribes.

[a] Geographie des Grecs Analysée, page 133.

further to the north, to have corresponded with Gosselin's opinion. The Ganges of Taprobana is the Mowil Ganga of Ceylon: the Soana, in the west, may also have a corresponding modern name, but cannot be the Soan which runs to the east into the great Ganges. 2. Taprobana is thinly peopled with a few tribes, unknown in ancient descriptions of India; and the whole form, and central ridge of mountains bear no resemblance whatever to the Deccan, but on the contrary approximate nearly to those of Ceylon. 3. The long strait mentioned by Gosselin is unknown in the map of Ptolemy, which on the contrary rather justly represents the sea between the coast of Coromandel and Ceylon, and his isle of *Cory* seems to be that now corruptly called *Cow* island: on the contrary a long strait must have been necessary, if Ptolemy had intended the Deccan, which is far wider in the north, than in the south; whereas Taprobana is represented narrower like Ceylon. 4. The *Commaria* of Ptolemy seems palpably to represent Cape Comari, or Comorin, and that geographer justly adds that it is an *extreme* promontory: in like manner other rivers, regions, towns, &c. may be traced in Ptolemy's India, which really belonged to the Deccan, though the latitudes be very erroneous.

Upon the whole it seems evident that Ptolemy has been misled in his delineation of India, by information so grossly fallacious as cannot be easily accounted for; but the candid apology of an able judge ought not to be omitted, especially as it relates to the greatest error of the father of geographical precision[3]. "We ought to reflect that Ptolemy's ideas were collected from the people who sailed along the coast, and who described what they had seen and heard without regard to what lay beyond it: and moreover made use of too wide a scale; as commonly happens when the sphere of knowledge is confined, and the geographer works *ad libitum*, from the coast towards the interior of an unknown continent. Whoever consults Ptolemy's map of India should carry these ideas in his mind: that the construction of it is founded on three lines; one of which is that of the whole coast, from the gulph of Cambay round to the Ganges; a second, the course of the Indus, and the Gulphs of Cutch and Cambay: and the third, the common road from the Panjab to the mouths of the Ganges. The objects within these lines have a relative dependence on each line respectively: and are invariably placed at too great a distance within them: it therefore happens that an object which should have occupied a place near one of the lines is thrust towards the middle of the map; and this being a general case, places on opposite sides of India are crowded together, as Arcot and Sagur *(Sagheda)* are. At the same time the central parts are wholly omitted; as being in reality unknown." Our learned geographer does not however explain how Ptolemy's map of Ceylon happened to represent that island five times too large. A similar instance indeed occurs in Bishop Leslie's map of Scotland, in which the isle of Hirta or St. Kilda, is represented as three times as large as Mull; and perhaps the extent of Taprobana was in like manner swelled from its celebrity, or drawn by some mariner, and followed by Ptolemy in his description without observing the size of the scale.

However this be, there can be no doubt that D'Anville, in his large map of the world as known to the ancients, 1763, has in general assigned the names given by Ptolemy to their just positions, though Gosselin correct with great justice that able geographer's delineation of India beyond the Ganges. It would be foreign to the present purpose to enter into any detail; but a few names of rivers may be indicated.

After the Indus the rivers delineated by Ptolemy on the western coast are the Mophides, the Namadus, followed by a large river with a Delta called the Nanaguna, which is succeeded by two small streams, the Pseudastomus and the Baris. It is well

[3] Rennell, 241.

known

known that no river of any length flows to the west, after passing the Taptee of Surat, but navigators unacquainted with the interior may easily have mistaken creeks for estuaries; and D'Anville supposes that Baris, the most southern, is in the neighbourhood of Goa. It is however to be wished that a map of ancient India were constructed from Ptolemy, and other authorities, applied to the recent information contained in Major Rennell's excellent map. Nor is it easy to conceive how D'Anville, came to delineate a false Ganges, in the centre of the eastern coast, instead of the Manda, or the Tyndis of Ptolemy.

This celebrated country received little further illustration till the sixth century, when the intelligence of Cosmas is of no consequence, except as it elucidates the Persian traffic with India. Some materials may also be derived from the accounts of the Mahometan travellers, in the ninth century; and the oriental works of geography; nor was the great English king, Alfred, incurious concerning this celebrated region *. Marco Polo, the father of eastern geography, as known to Europeans, was followed by other travellers; and at length the Portuguese discovery of the Cape of Good Hope gradually led the way to the precision of modern knowledge; to which a recent geographer, Major Rennell, has contributed with great success and deserved celebrity.

History.] The history of Hindostan is a most obscure and embroiled subject, as either no native chronicles were written, or they were destroyed by the Bramins, anxious to obliterate the memory of former and happier ages, when their inordinate power was not established. Sir William Jones, and Anquetil du Perron, have bestowed some attention on this subject; but their investigations are more interesting to the antiquary than to the general reader †. The native traditions seem to describe the northern part of Hindostan as subject to one Rajah, or Sovereign; which is little probable, as the most ancient extraneous accounts represent this wide country divided, as was to be expected, into many monarchies. By all accounts however the Deccan, or southern part, was subject to a distinct emperor, even to modern times. Major Rennell observes that Ferishta's history of the Deccan opens to our view the knowledge of an empire that has scarcely been heard of in Europe. "Its emperors of the Bahmineah dynasty, (which commenced with Hassan Caco, A. D. 1347,) appear to have exceeded in power and splendour those of Delhi, even at the most flourishing periods of their history. The seat of government was at Calberga, which was central to the great body of the empire, and is at this day a considerable city. Like other overgrown empires it fell to pieces with its own weight: and out of it were formed four potent kingdoms, under the names of Visiapour, (properly Bejapour,) Golconda, Berar, and Amednagur; of whose particular limits and inferior members we are not well informed. Each of these subsisted with a considerable degree of power until the Mogul conquest; and the two first, as we have seen above, preserved their independency until the time of Aurunzebe[4]."

Chronology.] The Hindoo chronology, published by Anquetil du Perron, is that of the Ragias, Rajas. or sovereigns of Bengal; and the most remarkable facts are repeated invasions by the Persians, one of them supposed to be fourteen centuries

* The Saxon chronicle, and other English writers mention that Suithelm Bishop of Shireburn carried a present from Alfred to the shrine of St. Thomas in India, and returned in safety with some curiosities from the country. This Thomas was not the Apostle but some Nestorian missionary; and his shrine is at Melapour, near Madras, on the coast of Coromandel. Alfred little foresaw that an English settlement was to include this holy ground.

† Asiatic Researches, vol. ii. and Bernoulli's collection concerning India, Berlin, 1786, 4to. tome ii. (not *Bernouilli*, as Dr. Robertson always spells the name.)

[4] Rennell, lxxiv.

before

before the Christian era. This kingdom of Bengal seems to have included almost the whole of Gangetic Hindostan, being perhaps that of the Prasii, or Gangaridæ of classical authors. But the names and extent of the early kingdoms of Hindostan are little known or investigated, and no credit can be lent to the fabulous poems, tales, and traditions, which represent this immense country as subject to one sovereign, an event which probably never occurred, till the reign of Aurungzeb, and may probably never again happen*.

Historical Epochs.] The Hindoo epochs, consisting of millions of years, and other fabulous circumstances, have hitherto attracted more attention than a clear arrangement of the Hindoo sovereignties, and an account of the most authentic facts that can be recovered concerning them. While these chronologies differ by one or two thousand years concerning the incarnation of Buddha, we may judge of their exactness in less important events. Nor is it necessary to dwell on the children of the sun and moon, who reigned at Audh and Vitora; or the new dynasty of Magadha, or Bahar. The seventy-six princes, who are said to have reigned one thousand three hundred and ninety-nine years in Avabhriti, a town of the Dacshin, or south, which we commonly call Deccan, are slightly mentioned by Sir William Jones, who, with all his learning and talents, appears to be bewildered in the mist of Sanscrit mythological history.

Suffice it to observe that the Hindoos never seem to have boasted of one native historian, and the best materials are derived from Persian memoirs; from which Ferishta, himself a Persian, compiled his histories of Hindostan towards the beginning of the seventeenth century. Indeed in the whole complex maze of Hindoo literature there is a striking deficiency of good sense*. The more we are acquainted with Indian philosophy, the less veneration we entertain; and are led to infer that the admiration of the ancients was rather excited by the singularity than by the wisdom of the Brahmans. The heat, and other peculiar circumstances, of the climate have confessedly a degrading influence on the mind, which instead of bearing solid fruits here shoots into fantastic flowers. The political institutions must have been originally bad, as the great mass of the people was oppressed by one or two privileged casts, whence the dispirited natives were conquered by every invader. And the absurd philosophy of the Brahmans, for that philosophy must be absurd which delights in mythological dreams, the most fanatical practices, and common suicide; which may be said to crush all genius or exertion by the oppressive chains of cast, unknown to nature and providence; which has never in peace or war produced one man distin-

* Alexander found two or three kingdoms in the Panjab, and the great Porus had only an army of 34,000. The Arabic travellers in the 9th century mention the *Balhara*, the most powerful prince in India by all the oriental accounts, in Guzerat. He is the *Belhar* of Abulfeda, who extends his dominions to Chanbalic or China.

In the tenth century Massodi describes Hindostan as divided into four kingdoms: 1. On the Indus, capital Moultan: 2. Canoge on the Ganges, perhaps including Bengal on the east: 3. Cashmir: 4. Guzerat, the sovereign of which he calls the Balhara. He had himself visited the country. Roberts. 225.

It seems clear that Hindostan, like other countries, became gradually reduced to fewer sovereignties, and the tales of the Bramins, or Ferishta, a modern author, can never overturn these facts.

Add the recent discovery of the kingdom of Carnada, in the south; of which the capital was Bijanagur (View of the Deccan 1791, and Rennell's last memoir.) Scaliger de Subtil. mentions that the diamond was found fifteen days' journey beyond this city, in the mountain of Ahingar: this implies Golconda.

† Mr. Bentley observes, As. Res. v. 315, that the Hindoo æras and dates are all blended together into one mass of absurdity and contradiction. A curious instance of this appears with regard to the celebrated temples of Ellora, and the singular fortress of Deoghir, or Dowlatabad, formed on a high conic rock; for the Mahometans, whom we Europeans regard as rather extravagant in chronology, say that they were erected 900 years ago; while the Bramins affirm that they have stood not less than 7894 years! As. Res. vi. 385.

guished by supereminent talents ; such philosophy must be considered as far inferior to the plain good sense even of some other Asiatic nations. In short the history of Hindostan has only to be contrasted with that of China, to evince the superiority of practical good sense over theoretic wisdom and philosophy, which are often mere hotbeds of new eccentricities and follies. And though mankind have in all ages wondered at the singularities of the Indian sophists, yet not one general precept of wisdom, not one rule for the conduct of life, not one discovery generally useful to mankind, can be traced to that celebrated and miserable country, where passive millions drag a feeble existence under the iron rod of a few crafty casts, amidst a climate and a soil almost paradisaical, and where it seemed impossible for human malignity to have introduced general degradation and distress *.

As there is thus no native history, and we know little more from their traditions, than that the empire of Hindostan Proper in the north was distinct from that of Deccan in the south, we must be contented with the epochs derived from foreign records.

1. The invasion by Alexander the Great, who found western India divided among numerous potentates, though he advanced little further than Lahore. If even the northern half of Hindostan had been subject to one sovereign, as fabled in the native state, the circumstance would have been clear and apparent.

2. At a long interval appears the conquest of the north western part by Mahmoud of Ghizni, A. D. 1000.

3. The dynasty of the Patan, or Affghan emperors begins with Cuttub, A. D. 1205, and ends with Mahmoud III. 1393.

4. The Great Moguls, or Mongul Emperors begin with Baber, 1525; and continued, with a short interruption, by the Patans to Shah Aulum, 1760.

The invasion by Timur, and at a distant interval that by Nadir, also form remarkable epochs in the history of this passive country. The latter may be said to have virtually dissolved the Mogul empire. The Portuguese settlements were followed by those of the Dutch. The French power began to predominate in 1749, but speedily closed in 1761, with the loss of their principal settlement, Pondicherry. As merchants the English had long held small settlements in Hindostan, but the expedition into Tanjore, 1749, was the first enterprize against a native prince. Other contests followed concerning Arcot in the kingdom of Carnada, or what we call the Carnatic. In 1756 the fort of Calcutta, our chief settlement in Bengal, was taken by the Nabob, and many of our brave countrymen perished in a shocking manner from being confined in a small chamber. The battle of Plassey, fought in June 1757, laid the foundation of the subsequent power of Britain. Lord Clive, Governor of Bengal, 1765, obtained a grant from the nominal Mogul, of Bengal, Bahar, and part of Orissa, on condition of an annual tribute. Soon after the English were engaged in a contest with Hyder Alli, a soldier of fortune who had dethroned the lineal sovereign of Mayssur, or Mysore, and extended his conquests to the adjacent territories. Some conflicts followed on the confines of Carnada and Mysore ; but the event was little advantageous to either party. Hyder dying in 1783 was succeeded by his son Tippoo, who seems to have been a prince of inferior

* A writer in the Asiatic Researches (vi. 163.), after observing that the worship of Boodha extended over all Hindostan, and was not rooted out in the Deccan till about the twelfth century by the Bramins, who are the real heretics, and far from introducing any reformation have increased all the absurdities and puerilities a thousand fold, proceeds to give the following just character of those visionary sophists. " No useful science have the Brahmens diffused among their followers ; history they have totally abolished ; morality they have depressed to the utmost ; and the dignity and power of the altar they have erected on the ruins of the state, and the rights of the subject. Even the laws attributed to Menu, which, under the form in use among the Birmas, are not ill suited for the purpose of an absolute monarchy, under the hands of the Brahmens have become the most abominable and degrading system of oppression, ever invented by the craft of designing men."

abilities,

abilities, and expiated his ill-arranged plans by his death, and the partition of his territories, in 1799.

The Bengal provinces have been in our possession since 1765; and Benares was added in 1775. This portion might constitute a considerable kingdom, and is sufficiently compact, and secure by natural advantages, independent of a formidable force. The Sircars, or detached provinces, partly belong to Golconda, and partly to Orissa, forming a long narrow slip of country from twenty to seventy-five miles wide, but about three hundred and fifty in length. The word Sircar is almost synonymous with an English county, implying a division of a Souba, or great province; and these detached Sircars, or counties, being to the north of Madras, on which they are dependent, are commonly styled the Northern Sircars [5]. In 1754 they were acquired by the French; and conquered by the English under Colonel Clive in 1759.

The English settled at Madras about the year 1640; and their territory here extends about a hundred and eight British miles along the shore, and forty-seven in breadth, in the centre of the ancient kingdom of Carnada. The recent and extensive acquisitions in the south have been already mentioned.

Nor among the modern historical epochs of Hindostan must the celebrated battle of Panniput, not far to the N. W. of Delhi, be omitted, which was fought in 1761, between the Mahometans under Abdalla King of Candahar, and the Marattas, in which the latter were defeated: the Mahometans were computed at 150,000, and the Marattas at 200,000.

Ancient Monuments.] The ancient monuments of Hindostan are very numerous, and of various descriptions, exclusive of the tombs and other edifices of the Mahometan conquerors. Some of the most remarkable are excavated temples, statues, relievos, &c. in an island near Bombay; but the most magnificent and extensive are near the town of Ellora, about two hundred miles to the east of Bombay [6]. The latter are minutely described and illustrated with plates in the sixth volume of the Asiatic Researches, to which the reader is referred. The idols represented seem clearly to belong to the present mythology of Hindostan; but at what period these edifices were modelled, whether three hundred or three thousand years ago, must be left in the darkness of Hindoo chronology. Several ancient grants of land, some coins, and seals, have also been found. Yet all these remains little correspond with the exaggerated ideas entertained concerning the early civilization of this renowned country; while the Egyptian pyramids, temples, and obelisks, strongly confirm the accounts preserved by the ancient historians.

Mythology.] Though the mythology of the Hindoos may pretend to great antiquity, yet their present form of religion is supposed to vary considerably from the ancient. It is inferred that while the religion of Boodha, still retained by the Birmans and other adjacent nations, was the real ancient system of Hindostan, the artful Bramins have introduced many innovations, in order to increase their own power and influence. Sir William Jones, and other intelligent authors on the subject, are decidedly of this opinion, and caution us not to confound the ancient Brahmans with the modern Bramins. The chief modern deities are Brahma, Vishna, and Shiva, or the creator, preserver, and destroyer; while Boodha seems to have been the chief object of veneration in former periods. The mythology of Hindostan has been ably illustrated by Monsieur Roger, chaplain of the Dutch factory at Poolicat on the coast of Coromandel, in his curious book intitled *La Porte ouverte;* and in more recent times by Sir William Jones, and other able enquirers. In a system so full of imagination it is no wonder that the analyses are sometimes discordant, but it appears that the

[5] Rennell, cxxxiv.

[6] As. Res. vol. i. and vi.

fabric rests on that almost universal system of the east, the belief in a Supreme Creator, or First Cause, too ineffable and sublime for human adoration, which is therefore addressed to inferior, but great and powerful divinities. The names and attributes of the gods and goddesses, for the voluptuous Hindoos delight in female divinities, are very numerous, and as human wants and ideas are almost universally the same, correspond in many instances with the Greek and Roman polytheism *.

RELIGION.] The religion of the Hindoos is artfully interwoven with the common offices of life; and the different casts are supposed to originate from Brahma, the immediate agent of creation under the supreme power, in the following manner:

The *Brahmin*, from the mouth (wisdom): To pray, to read, to instruct.

The *Chehteree*, from the arms (strength): To draw the bow, to fight, to govern.

The *Bice*, from the belly, or thighs (nourishment): To provide the necessaries of life by agriculture and traffic.

The *Scoder*, from the feet (subjection). To labour, to serve [7].

The ancients sometimes enlarged the number of these casts, or perpetual orders of men, by an erroneous subdivision of two or more, yet it is impossible to read their accounts without perceiving that the casts themselves existed from time immemorial, but with one important variation. For it would appear that in ancient times the Brahmans, like the Priests, or Monks of Ava, Siam, and other states, which still follow the worship of Boodh, were not hereditary, or a distinct levitical tribe, but that any member of the other casts might enter into this order, which was of course deemed inferior to the chief secular, or military cast. At present the meanest Bramin will not condescend to eat with his sovereign. Setting the ridiculous and fanciful tales of this interested tribe wholly out of the question, it would appear that, in the usual circle of human affairs, a contest had arisen between the regal and ecclesiastic powers. The latter, instead of being subdued as in China, and Japan, acquired the superiority as in Tibet. But in Hindostan, from a most refined and cunning policy, the priesthood asserted the divine institution of the several casts, and, as was natural, pronounced their own to be the supreme, and possessed of innate and hereditary sanctity. It seems to be allowed that Boodh was a deified philosopher: and it is probable that Brahma was the sophist who invented the new casts, and was not only deified, but placed in the first rank of the gods, by the grateful priesthood, the sole directors of the national mythology.

However this be, the religious tenets of the Hindoos are so artfully and closely interwoven with their existence, that they are as distinct and peculiar a people as the Jews, and their conversion to Christianity seems even more hopeless. If the Zingari, or Gipseys be, as is now credited, Pariars of the meanest Hindoo class, who fled from the cruelties of Timur, we may judge from the state of that singular tribe, in the various countries of Europe, for these four centuries, that if the Hindoos themselves should be scattered they would remain, like the Jews, a marked and peculiar people.

GOVERNMENT.] Hindostan is now divided into many governments, the form of which must be considered in describing the several states. Suffice it here to observe, that though the Bramins be the most dignified cast, yet there do not seem to have been one or more high priests, as in the surrounding countries. This singularity remains to be explained by learned enquirers. The sovereignty was abandoned to the military cast, and the monarch was presumed to be proprietor of all the lands, except those belonging to the church, The Ryots held their possessions by a lease at a fixed rate, and considered as perpetual. The Zemindars were, in the opinion of some, only collectors

* In Sonnerat's decorated publication good representations will be found of the chief Hindoo divinities.

[7] Robertson's Disquisition, p. 338.

of

of the royal rents from the Ryots, or farmers; but according to others the Zemindars were landed gentlemen, who had an hereditary right to these rents, upon paying a settled proportion to the crown. It is to be wished that the most liberal European forms were introduced into our own establishments, which might serve as a beneficent model to the surrounding nations.

Laws.] The laws of the Hindoos are intimately blended with their religion, and the curious reader may consult the code, translated and published by the direction of Mr. Hastings.

Population.] The population of this extensive part of Asia is supposed to amount to sixty millions, of which the British possessions may now perhaps contain a quarter, especially as frequent recent conflicts have thinned the population in many other parts of Hindostan. When it is considered that China is about one quarter less than Hindostan, and yet it is said to contain two hundred and thirty millions, we may judge of the boasted effects of Hindoo philosophy, more fit for the visionary cell of the recluse, than to promote universal spirit and industry.

General Revenues.] The general revenues of Hindostan were computed, in the time of Aurungzeb, as already mentioned, by a precise calculation of those of the several provinces, at thirty-two millions sterling; equal perhaps, considering the comparative price of products, to one hundred and sixty millions sterling in modern England.

Political Importance.] The political importance and relations of Hindostan are now divided among many powers. So miserable was the intestine constitution that this wide and populous country, defended on all sides by ranges of mountains, has in all ages fallen a prey to every invader. The fantastic institutions, like those of the ancient Persians, prevent the Hindoos from forming a maritime power; and even the small fleets of Siam and Pegu, which follow the more liberal doctrines of Boodh, seem unrivalled in the history of Hindostan.

Manners and Customs.] The manners and customs of the Hindoos are intimately blended with their religion, and are universally similar, with a few exceptions in mountainous and other peculiar districts. One of the most singular begins to expire, that of giving the living widow to the same flames with her husband's corpse. The ancients represent the Bramins as accustomed to terminate their own lives on funeral piles lighted by themselves. But by what refinement of cruelty this custom was extended to involuntary and helpless females has not appeared: perhaps the cause was to enforce the preservation of their husband's health by making their life depend on his*. But this and other monstrous institutions of the Bramins are treated with lenity, and even respect by many authors, who seem to inherit the Greek astonishment at these fanatics:

"And wonder with a foolish face of praise."

The other manners and customs of the Hindoos have been illustrated by many travellers. As soon as a child is born it is carefully registered in its proper cast, and astrologers are consulted concerning its destiny; for the Hindoos, like the Turks, are strict predestinarians. A Bramin imposes the name. The infant thrives by what we would call neglect; and no where are seen more vigour and elegance of form. The boys are generally taught reading and writing by Bramins, but the girls are confined at home till their twelfth year [8]. Polygamy is practised; but one wife is acknowledged as supreme: the ceremony is accompanied with many strange idolatrous forms, mi-

* This custom was chiefly enforced on the wives of Bramins.

[8] See a voyage to the East Indies by Fra. Paolino da San Bartolomeo, 1800, 8vo: the author's lay name was Wesdin, an Austrian.

nutely described by the author last quoted. It is well known that the Hindoos are extremely abstemious, and wholly abstain from animal food * and intoxicating liquors; yet if we judge from the fanatic penances, suicides, and other superstitious frenzies, no where on earth is the mind so much disordered. The houses and dresses are of the most simple kind; and nudity is no reproach to a Bramin. The houses are built of earth or bricks, covered with mortar, and sometimes with excellent cement; with no windows, or only small apertures. There is generally only a ground floor, inclosing a court, with a small gallery supported by slight wooden pillars. The amusements consist of religious processions; but though dancing girls abound, yet theatrical exhibitions do not seem so common as in the countries further to the east.

The manners of the Nairs in the south of Malabar, have attracted notice from their singularity.

Nairs.] "The Nairs marry before they are ten years of age, in order that the girl may not be deflowered by the regular operations of nature; but the husband never afterwards cohabits with his wife. Such a circumstance, indeed, would be considered as very indecent. He allows her oil, clothing, ornaments, and food; but she lives in her mother's house, or, after her parents' death, with her brothers, and cohabits with any person that she chooses of an equal or higher rank than her own. If detected in bestowing her favours on any low man, she becomes an outcast. It is no kind of reflection on a woman's character to say, that she has formed the closest intimacy with many persons; on the contrary, the Nair women are proud of reckoning among their favoured lovers many Brahmans, Rajas, or other persons of high birth: it would not appear, however, that this want of restraint has been injurious to population. When a lover receives admission into a house, he commonly gives his mistress some ornaments, and her mother a piece of cloth; but these presents are never of such value, as to give room for supposing that the women bestow their favours from mercenary motives. To this extraordinary manner of conducting the intercourse between the sexes in Malayala, may perhaps be attributed the total want, among its inhabitants, of that penurious disposition so common among other Hindoos. All the young people vie with each other, who shall look best, and who shall secure the greatest share of favour from the other sex: and an extraordinary thoughtlessness concerning the future means of subsistence is very prevalent. A Nair man, who is detected in fornication with a Shanar woman, is put to death, and the woman is sold to the Moplays. If he have connection with a slave girl, both are put to death; a most shocking injustice to the female, who, in case of refusal to her lord, would be subject to all the violence of an enraged and despised master.

"In consequence of this strange manner of propagating the species, no Nair knows his father; and every man looks upon his sister's children as his heirs. He, indeed, looks upon them with the same fondness that fathers in other parts of the world have for their own children; and he would be considered as an unnatural monster were he to show such signs of grief at the death of a child which, from long cohabitation and love with its mother, he might suppose to be his own, as he did at the death of a child of his sister. A man's mother manages his family; and after her death his eldest sister assumes the direction. Brothers almost always live under the same roof; but if one of the family separates from the rest, he is always accompanied by his favourite sister. Even cousins to the most remote degree of kindred, in the female line, generally live together in great harmony; for, in this part of the country, love, jealousy, or disgust, never can disturb the peace of a Nair family. A man's moveable property, after his death, is

* This only implies to the Bashnù or Bania cast. The Bruhmans, Chetries, and various subdivisions of Sudors, eat animal food, though they abstain from the flesh of oxen. *Ouseley.*

[9] Wesdin, 317,

divided equally among the sons and daughters of all his sisters. His landed estate is managed by the eldest male of the family; but each individual has a right to a share of the income. In case of the eldest male being unable from infirmity or incapacity, to manage the affairs of the family, the next in rank does it in the name of his senior.

"The Naimar are excessively addicted to intoxicating liquors, and are permitted to eat venison, goats, fowls, and fish *."

LANGUAGES.] The general ancient language of Hindostan is believed to have been the Sanscret, an original and refined speech, compared by Sir William Jones with the Greek and Latin. The more common dialects are chiefly the following [9]:

1. That of Kandia in the interior of Ceylon, which is said nearly to resemble the Sanscret.

2. The Tamulac, used in the Deccan, or southern part, in Madura, Mysore, and some parts of the Malabar coast. Wesdin, who was conversant in it, pronounces it harmonious and easily acquired.

3. The Malabar language, extending from cape Comari to the mountain Illi, which divides Malabar from Canara. One of its alphabets is called the *Maleyam Tamul*. Perhaps this may be the primitive Malay language; but *Mala* in general implies a mountain, as *Gaut* does a pass.

4. That of Canara, which extends as far as Goa.

"5. The Marashda language. It is prevalent throughout the whole country of the *Marashdi*, who are very improperly called *Marattas*.

"6. The Talenga, an harmonious, nervous, masculine, copious, and learned language, which, like the Samscred, has fifty-two characters; and these are sufficient to write the latter. It is spoken on the coast of Orixa, in Golconda, on the river Kishna, and as far as the mountains of Balangat. All these languages have their own alphabets: so that in every province you must make yourself acquainted with a distinct kind of characters, if you wish to express your thoughts in the dialect common in each.

"7. The common Bengal language: a wretched dialect, corrupted in the utmost degree. It has no V, and instead of it employs the B; so that instead of *Ved* you must write *Beda*. It is spoken at Calcutta; and in Bengal on the banks of the Ganges.

"8. The Devangaric, or Hindostan language; called by some Nagru, Nagari, and also Devanagari †. It is spoken at Benares, or Venares, and consists of fifty-two characters, with which you can write the Samscred. Its mode of writing has been introduced into all the northern part of India. A specimen of it may be seen in the first volume of the Asiatic Researches.

"9. The Guzaratic, which has been introduced not only into the kingdom of Guzarat, but also at Baroche, Surat, Tatta, and the neighbourhood of the Balangat mountains. Its characters are little different from those of the Devanagaric.

"10. The Nepalic, which is spoken in the kingdom of Nepal, and has a great similarity to the *Devanagaric*."

So far Wesdin; who adds his opinion, that all these languages proceed from the Sanscret, which Sir William Jones imagines was transplanted from Persia. Hindostan is in truth an excellent field for the investigation of antiquaries, who may here confound hundreds of years with thousands; and may dispute for ever without arriving at any decision.

* Buchanan's travels, ii. 411.

[9] Wesdin, 317.

† Nagari is the name of a character, not of a language. The common Nagari is used in Benares to write the Hindustani tongue. The Devanagari (or character of the gods) is employed to write the Sanscrit. There are other Nagaris, as the Mahageni Nagari, used exclusively by native bankers or Mahajans throughout Hindostan. *Quseley*.

LITERATURE.]

LITERATURE.] The literature of Hindostan doubtless contains several valuable and curious monuments; but the want of history and chronology renders their epochs extremely uncertain. A language may be antiquated in the course of a few centuries as, well as in the lapse of some thousands of years. But while the Hindoo literati compute by millions of ages, they forget that little division called a century. There seems no chronology of authors who successively quote or mention each other; and there is not even any great land mark, like the age of Confucius among the Chinese. Hence little else than confusion and contradiction are to be found in the numerous accounts published of Hindoo literature.

The most important books are the Vedas; one of which has nine sections, and another one thousand. It is to be hoped that these forgeries are more ancient than the Puranas, which have been demonstrated by Mr. Bentley not to exceed seven centuries in antiquity [10]. There are some epic poems which pretend to contain fragments of genuine history [11]. The most ancient, called Ramayana, was written by Valmici; and next in celebrity is the Mahabarat of Vyasa, who is said to have been the author of some Puranas, and of course could not have flourished above seven hundred years ago: and it is probable that the more ancient poem cannot aspire to a much higher date. It is a great singularity that the old Hindoo grants of land, many of which have been translated and published, are extremely long, and in a strange poetical or inflated style, some of the compound words consisting of not less than one hundred and fifty syllables! When we compare these singularities with the brevity and clearness of the Greek and Roman inscriptions, and the unbiassed dictates of plain good sense, we are led to conclude that the Hindoos are the puerile slaves of a capricious imagination. And though some translations of their best works have already appeared, they have not acquired the smallest degree of European reputation; and have very little interested a few curious enquirers, though eager to be pleased. To compare such tedious trifles, alike destitute of good sense, vigorous genius, or brilliant fancy, with the immortal productions of Greece or Rome, would only confirm the idea, that the climate itself impairs judgment while it inflames imagination.

The Hindoos are ignorant of the Chinese art of printing, and the materials used in their manuscripts seem very perishable; nor have we any rules for determining the antiquity of these manuscripts. To an exact enquirer this would have been the first topic of investigation; but it has on the contrary been completely neglected. We have merely the bold assertions of Bramins, eagerly imbibed by European credulity, instead of successive arguments and proofs.

ANCIENT CIVILIZATION.] Dr. Robertson considers the ancient and high civilization of the Hindoos, as established by their division into casts; by their civil policy; by their laws; their useful and elegant arts; their sciences and religious institutions [12]. But the arguments of that able author seem liable to some objections. 1. The distinction into casts is doubtless ancient and peculiar; but seems to have proceeded from a crafty priesthood in order to fix their own superiority and preponderance. The error of the Doctor's argument consists in his confounding casts with trades, while they are in truth totally distinct, as neither a priest, a soldier, a farmer, nor a labourer is a tradesman. Separation of trades argues refinement; but from the Hindoo casts nothing can be concluded, except that agriculture existed at their institution. When our author

[10] As. Res. vi. According to Giorgi, Alph. Tib. 127. Veda or Bed is the first principle; as the Bedu of Macedon is air, spirit, but of Orpheus water. May not the term have passed from the Macedonian kingdom of Bactria?

[11] As. Res. i. 340, a poet called Somadeva begins with the history of Manda, King of Patna. Ib. iv. xviii.

[12] Disquisition, 257.

adds,

adds, "what now is in India, always was there," he evinces rather a singular love of hypothesis. All we know from antiquity is, that the casts existed in the time of Strabo, Arrian, and Pliny, and perhaps were not known even in the time of Alexander. Suppose that they even existed three centuries before the Christian æra, we have only a proof that agriculture and merchandize were then known in Hindostan: and yet the first tribe that passed from the centre of Asia might, even in that case, have only begun to people the north of Hindostan a few centuries, or say a thousand years before the Christian æra. 2. The civil policy is considered as proving early civilization, not indeed because the Hindoo fables represent the whole country as subject to one monarch, but because Alexander found kingdoms of some magnitude. But these kingdoms were no larger in proportion, than those which Cæsar found in barbaric Gaul and Britain. The magnitude of the country is forgotten, inhabited by an indigenous people, and remarkably destitute of natural barriers. That some old institutions remain is no wonder, when the identity of oriental customs is considered. 3. The laws are sufficiently numerous and complex; but so are those of England at present, though they were in a very different predicament six centuries ago; but our ingenious author speaks familiarly of the Hindoo millions of years, and forgets our little centuries. The Hindoo code may be extremely ancient; and yet perhaps was written about the plain Christian year 1200. 4. The useful and elegant arts likewise require the illustration of chronology, and as there are no inscriptions with clear authentic dates in the famous excavations in the isle of Elephanta, in that of Salsett, or at Elora, it is impossible to pronounce concerning their antiquity, especially as the mythology continues the same. These, and other monuments, may perhaps be of great antiquity, but it is as probable that they were the works of the famous Balharas, as of any imaginary Hindoo emperors, who only exist in the wild imaginations of the Bramins. The ruins of Persepolis evince that the edifice could not have been erected since the Mahometans conquered that country in the seventh century. But where the religion continued pagan, and a splendid native monarchy existed till the sixteenth century, to any sober enquirer it will appear more rational to conclude that these monuments belong to the fifteenth century after Christ, rather than to the fifteenth century before. And this opinion will remain equally firm, if all the Bramins computed their duration by millions or billions of years. In like manner the detached temples in the south may present magnificent proofs of Hindoo architecture in the *seventeenth* century. That the Hindoos could both make and dye linen and cotton is no proof of great social progress. The ancients traded to India for spices, precious stones, and silk, but manufactured goods are scarcely mentioned. The uncertain antiquity of Hindoo literature has been already discussed. 5. As to the sciences, the want of chronology is equally felt: and it is probable that the Hindoos might derive some knowledge from the Greeks of Bactria. The absurd study of astrology, still in the highest repute among the Bramins, has of course occasioned a particular attention to be paid to astronomy; but the Chinese, and perhaps even the Siamese, rival the Hindoos in this science, in which it is easy to calculate tables backward to any epoch*; and the Bramins perhaps have sufficient patience to compute eclipses, &c. which must have happened, if this plan had existed ten millions of years†. 6. In the last place, our most learned and

* The Cali Yug was, like the Julian period, fixed by retrospective computation. It begins about 3000 years before the Christian æra. As. Res. iii. 224.

† The whole arguments of M. Bailly and others for the antiquity of the Hindoo astronomy seem at length to be completely overturned by a learned dissertation of Mr. Bentley, published in the Asiatic Researches, 1799, (vi. 540, 8vo. edit.) to which the curious reader is referred. The result is, that the system so eagerly applauded, and supposed by M. Bailly, Dr. Robertson, and others, to be of such remote antiquity, cannot be of a greater age than *seven hundred and thirty-one* years. In other words, it was composed about A. D. 1068

and respectable author considers the religious institutions of the Hindoos as a proof of early and high civilization. Yet it is not a little singular that all his arguments concerning the regularity of the system, the magnificent temples, &c. might have been applied to the Roman Catholic system in Scandinavia, in the year 1300; at which time it had not there existed above two centuries. The mythology of Hindostan is probably as ancient as its first population, and has been gradually expanded and refined like classical paganism. But the recent discovery, that the worship of Boodh preceded that of Brahma, could not have been foreseen; and it is probable that in many respects the ancient system differed most essentially from the modern.

So much for the ancient civilization of the Hindoos, who are nevertheless at present in general highly civilized, and of the most gentle and amiable manners. But perhaps in no art nor science are they equal to the Chinese or Japanese; and in most are confessedly greatly inferior.

Universities.] The chief university in the north is that of Benares, a most celebrated and ancient school, now included in the English possessions. In the Deccan the academy of Triciur, on the Malabar coast, is also in great repute, and according to our author: "At *Cangiburam*, in *Carnate*, there is still a celebrated Brahman school, which, according to the testimony of Ptolemy, existed in the first century of the Christian æra; and its members are certainly equal in celebrity to the Brahmans of *Vanares*, or *Banares* [13]." It is to be hoped that our recent acquisitions in the south will lead to the discovery of the new literary treasures in that quarter, where it is to be expected that native knowledge is more pure and perfect than in the north, where it was so long trampled under foot by the Mahometan conquerors.

Inland Navigation.] With respect to inland navigation Hindostan forms a striking contrast with China. In the fourteenth century Feroz III., of the Patan dynasty, ordered some short canals to be dug in the neighbourhood of Delhi; and had an intention as is said of uniting the Ganges with the Indus, or Setlege. This intended canal, which would not have been above one quarter the length of the great canal of China, has been praised as a grand and wonderful design; a sufficient proof of the great inferiority of the Hindoos, and their Mahometan victors, in the solid and useful arts.

Manufactures.] The manufactures of Hindostan have been celebrated from early antiquity, particularly the muslins and other fabrics from cotton. Piece goods, as we call them, are mentioned by the author of the Periplus, and other ancient writers, who praise the manufacture and the beautiful colours with which it was dyed. The Hindoos, in the time of Strabo, were also noted for elegant works in metals and ivory. These circumstances however afford no proof of such early civilization as is inferred; for the Romans, with the same materials, could at that period have equalled if not exceeded the Hindoos; and yet the Romans were barbarians till three or four centuries before the Christian æra. The fine linen of Egypt seems to have been of far more remote antiquity. Nor is Hindostan celebrated at this day for any manufacture, except those of muslins and callicoes, the other exports consisting of diamonds, raw silks, with a few wrought

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1068. "Therefore any Hindoo work in which the name of Varaha or his system is mentioned, must evidently be modern; and this circumstance alone totally destroys the pretended antiquity of many of the Puranas, and other books, which through the artifices of the Brahminical tribe have been hitherto deemed the most ancient in existence." Thus the chief pillar of the antiquity of Hindoo science has been torn down by this modern Sampson, and many antiquaries have perished in the ruins. Perhaps the Vedas may be found to have been composed by the artful Bramins, in imitation of the Koran, or of the books ascribed to Confucius, for the ancients do not mention any sacred Hindoo code. Menu may have been an honest lawyer of the 13th century; and the whole Hindoo arts and sciences, except weaving, be found to be derived from their neighbours. We may then exclaim, as the Egyptian priests did to Solon, "Ye Hindoos, and even ye Bramins, ye always were, and remain children." [13] Wesdin, 283.

silks,

silks, spices, drugs, &c. The shawls of Cashmir are also deservedly esteemed; being there woven from a material chiefly supplied by Tibet. Sonnerat [14] has illustrated with some care the arts and trades of the Hindoos. Painting is in its infancy; and they are strangers to shade and perspective. In the painted muslins and callicoes the brightness of the tints is owing to nature rather than art. Sculpture is as little advanced as painting, the design and execution being alike bad; yet the temples are sometimes majestic and solemn. In most trades very few tools are employed. The simple loom is reared in the morning under a tree, and carried home in the evening.

NATIVE PRODUCTS.] But it is the abundance of native products, which has in all ages rendered Hindostan the centre of great trade. Diamonds, and some other precious stones, are products almost peculiar; as well as many spices, aromatics, and drugs. In modern times the tea and porcelain of China, and other oriental articles, have been vaguely included among those of the East Indies. But rice, sugar, and many articles of luxury are products of Hindostan.

CLIMATE AND SEASONS.] The climate and seasons are considerably diversified by difference of latitude, and local situation. Yet in general, though the northern Alps of Tibet be covered with perpetual snow, there is some similarity of climate through the wide regions of Hindostan. In Bengal the hot, or dry season begins with March, and continues to the end of May, the thermometer sometimes rising to 110°: this intense heat is sometimes interrupted by violent thunder storms from the north-west, the seat of the grand Alps of Asia. The fogs are not only common, but horribly thick and unhealthy. Various meteorological journals, kept in Bengal, are published in the Asiatic Researches, whence a complete idea may be formed of the seasons. The rainy season continues from June to September: the three last months of the year are generally pleasant; but excessive fogs often prevail in January and February.

The periodical rains are also felt in Sindetic Hindostan, except in Cashmir, where they seem to be excluded by the surrounding mountains. In the rest of Hindostan they almost deluge the country, descending like cataracts from the clouds, and the Ganges and other rivers spread to a wide extent, the inundation ceasing in September. By the latter end of June the Ganges has risen fifteen feet and a half out of thirty-two, which is the total of its overflow [15]. In the mountains the rainy season begins early in April; but rarely in the plains till the latter end of June. "By the latter end of July all the lower parts of Bengal, contiguous to the Ganges and Burrampooter, are overflowed, and form an inundation of more than a hundred miles in width; nothing appearing but villages and trees, excepting very rarely the top of an elevated spot (the artificial mound of some deserted village) appearing like an island."

In the southern division the chains of the Gauts, or mountains of Malabar and Coromandel, supporting the high table land in the centre, intercept the great mass of clouds; and the alternate S. W. and N. E, winds, called the Monsoons, occasion a rainy season on one side of the mountains only, that is on the windward side *. Yet it

[14] Tome i. page 99.

[15] Rennell, 349.

* Rennell, 293. Through the whole of this account of Hindostan there has been occasion to regret the want of a geography of that country, regularly digested from the numerous detached accounts. Mr. Pennant's work yields infinitely to the geography of his Arctic Zoology; and independently of its want of plan and subdivision, is defective even in his own provinces, that of natural history, as connected with climate and soil.

In his last memoir, page 15, Rennell informs us that in southern Hindostan the S. W. monsoon prevails, May, June, and July, on the W. coast, and the N. E. monsoon on the opposite during a part of October, and all November and December: but the rain of the former is the heaviest, being 72 inches a year. In Coromandel summer begins in June; in Malabar in October, when it is winter in the other. Wesdin, p. 4.

 appears

appears that during the first part of the rainy monsoon, in May and June, on the coast of Malabar, a considerable quantity of rain falls, in the upper region or table land of Mysore, &c. Major Rennell observes, that at Nagpour, in the very centre of Hindostan, the seasons differ but little from their usual course in Bengal, and on the western side; that is the S. W. monsoon occasions a rainy season, though not so violent. In the parallel of Surat, from the mountains declining in height, and other causes, there is no longer that singularity which occasions rain on one side of the Deccan while the opposite season prevails on the other. The monsoons is from the N. E. from October to April; and from May to September in the opposite direction. The rainy season on the coast of Coromandel is with the N. E, monsoon; and on that of Malabar with the S. W.: in general March, April, May, and June are the dry months.

Hence while in Tibet the winter nearly corresponds with that of Switzerland, and the rest of Europe, in the whole extent of Hindostan, except in Cashmir, there can hardly be said to be a vestige of winter, except the thick fogs of our November: and excessive rains, or excessive heats, form the chief varieties of the year.

General Face of the Country.] The aspect of this wide country is extremely diversified; but in general there are no mountains of any considerable height, the highest Gauts on the south not being estimated at above three thousand feet. The frontier mountains of Tibet are of small elevation, compared with those of the interior of that country; and the wonderful extent of Hindostan consists chiefly of extensive plains, fertilized by numerous rivers and streams, and interspersed with a few ranges of hills. The periodical rains and intense heats produce a luxuriance of vegetation almost unknown to any other country on the globe: and the variety and richness of the vegetable creation delight the eye of every spectator.

Soil.] The soil is sometimes so excellent as to consist of black vegetable mould to the depth of six feet, probably resembling that of Egypt. Rice is the chief grain; and on the dry sandy lands of the coast of Coromandel great industry is displayed in watering it [16]. Maiz and the sugar canes are also favourite products. Extreme attention to manure seems far from being so general as in China or Japan: nor perhaps is it necessary. The cultivation of cotton may also be conceived to be widely diffused; and this plant particularly thrives on the dry coast of Coromandel. There must of courst be a considerable diversity in the modes of agriculture, as well as in the products, through so wide a country; but in general the implements are of the most simple description, though the fertility of the land amply compensates for any defect in practice or industry *.

Rivers.] In describing the large and numerous rivers of Hindostan, the Ganges and Indus ſhall first be considered, with their chief tributary streams; and a short account of the principal rivers in the central part ſhall be followed by those in the southern division. This arrangement naturally arises from the four grand divisions formerly mentioned.

Ganges.] The Ganges must still be considered as the sacred sovereign of the Hindoo rivers, an attribute not infringed by the recent discovery of the Burrampooter. It receives such a number of important tributary streams, that its magnitude exceeds what might have been expected from the comparative length of its course; which may however be estimated at about fourteen hundred British miles, while the Hoan-ho of China has been computed at two thousand, and the Kian-ku at two thousand two hun-

[16] Sonnerat, i. 106.

* The harvest is divided into two periods, the Khereef and Rubbee the, former being in September and October; and the latter in March and April. As. Res. vi. 45.

dred. The source of the Ganges remain a curious object of investigation; nor can much reliance be placed on its delineation in the map of Tibet by the Chinese Lamas, published by Du Halde, and followed by all succeeding geographers. For, independantly of the doubts which accompany the relation of these Lamas, the reader has only to compare Mr. Turner's map of his route in the south of Tibet, with the same country in Du Halde's map, to see that the latter is erroneous in almost every respect, as the course of the rivers, names of places, &c. &c. Such being the case, there is little room to expect more accuracy in the other parts. Anquetil du Perron considers the source of the Ganges as still unexplored; and says that the Chinese missionaries only discovered that of the Gogra, or Gagra, a large river running parallel with the Ganges on the east, and joining that noble stream above Chupra. The labours of the Jesuit Tieffenthaler have little illustrated this subject, though they seem to evince that the Gagra springs from a lake called Lanken, to the west of the lake of Mansaror, whence one source of the Ganges is supposed to flow [17]. Tieffenthaler has laid down the latitude of the noted Gangoutra, or Cow's mouth in lat. 33°, being a celebrated cataract where the Ganges is said to pass through a vast cavern in a mountain falling into a large bason which it has worn in the rock. At Hurdwar, about two hundred and eighty miles to the south of the Cow's mouth, (if this last be not a dream of the fabling Hindoos,) the Ganges enters the wide plains of Hindostan; and pursues a south east direction by the ancient city of Canoge, once the capital of a kingdom, by Allahsbad, Benares, Patna, &c. till dividing into many grand and capacious mouths it forms an extensive Delta at its egress into the gulf of Bengal. The extreme mouth of the Gangess are intersected with isles, called the Sunderbunds, overgrown with tall bamboos and other luxuriant vegetation, the profound haunts of the royal tiger and other beasts of prey. On the westernmost outlet of the Ganges, called the Hoogley, or Ugli, stands Calcutta, the capital of British Hindostan. This, and the most eastern which receives the Burrampooter, are the widest and most important branches.

BURRAMPOOT.] The noblest tributary stream of the Ganges is the Burrampooter, or as styled by the people of Asam the Burrampoot, being the Sampoo of the Tibetans. The course of this river, and its junction with the Ganges, were first ascertained by Major Rennell of the Engineers, and Surveyor General in Bengal, in 1765. This noble river runs for four hundred miles through the British territory; and for the last sixty miles before its junction with the Ganges is from four to five miles wide. On their union below Luckipour, they form a body of running fresh water, resembling a gulph of the sea, interspersed with islands, some of which rival in size and fertility our Isle of Wight. In the mouths of the Ganges, and the Megna, or Burrampoot, the Bore or sudden influx of the tide will rise instantaneously to the height of from five to twelve feet[18]. Between Bengal and Tibet the Burrampoot passes through the country of Asam, a region hitherto little known, and which may be here briefly described. It is divided into two parts by the river; the northern being called Uttarcul, and the southern Dacshincul. The mountains of Duleh, and Landa divide Asam from Tibet[19]. Asam is intersected by several streams which run into the Burrampoot; among which is the Donec in the south, the environs of which present fields, groves, and gardens. Among the products are many kinds of valuable fruits, with pepper, cocoa nuts, sugar and ginger. The silk is said to equal that of China; nor are musk deer unknown. The northern province, Uttarcul, surpasses the southern in tillage and population; gold and silver are said to be found in the sand of the rivers, and to furnish employment to

[17] See Tome ii. of Bernoulli's Collection, page 351, &c. Rennell, 313: the Jesuit's mountains of Kelasch, i. 150, seem the Kentals of the Lamas.
[18] Rennell, 358 [19] As. Res. ii. 171.

many of the natives. The Hindoo tenets are not known by the generality, though there be some Bramins, and the vulgar dialect somewhat resemble that of Bengal. The Raja or king resides at Ghargon, the capital, which, by this account, stands on the south of the great river: it is fenced with bamboos, and has four gates constructed of stone and earth. The palace, public saloon, &c. seem rudely to resemble those of the Birmans. The natives are a stout and brave race; and repeatedly foiled the invasions of the Moguls*.

The course of the Burrampoot is supposed to be nearly equal in length to that of the Ganges. The sources of these great rivers are stated to be very near, yet they separate to the distance of more than a thousand miles, and afterwards join in their termination.

GAGRA, &c.] The most important tributary streams which swell the Ganges are the Gagra, also called Sarjoo (a great part of whose course, like those of the Cosa and Teesta, belong to Tibet); the Jumma or Yumena, which receives many considerable rivers from the south, particularly the Chumbul and the Betwa; and lastly the Soan.

The Gagra, after pursuing a long course from the mountains of Tibet, pervades the province of Oude. It is singular that this river is wholly unknown by any name whatever in the map of Tibet by the Lamas; another cogent proof that it deserves very little credit. The comparative course of the Gagra is about seven hundred miles.

JUMNA.] The Jumna rises from the mountains of Sirinagur, pursuing nearly a parallel course to the Ganges on the west, as the Gagra does on the east; but its comparative course has not exceeded five hundred miles, when it flows into the Ganges at Allahabad. By receiving numerous and extensive streams from the south the Jumna contributes greatly to increase the breadth of Gangetic Hindostan; and the Chumbul, which joins the Jumna, is itself swelled with many tributary streams.

SOAN.] The Soan is said to spring from the same lake, or other source, with the Nerbudda, (which flows in an opposite direction to the gulf of Cambay,) and joins the Ganges not far below its union with the Gagra†. Several streams of smaller account fall into the Hoogley, or western branch of the Ganges.

* Turpin, in his account of Siam, Paris 1771, has given some interesting details concerning this country, probably derived from the recent materials of the Bishop of Tabraca, and other missionaries in Siam. He says it is the only country of Asia, where humanity is not crushed under the weight of despotism. No taxes are paid by the people, the expences of government being defrayed from the royal mines of gold, silver, lead, and iron. The silk is not the produce of the worm, but of another animal; and is of inferior quality. It is more probably a vegetable production. The men and women, who are well made, are only girt round the loins, their heads being covered with blue bonnets, decorated with swine's teeth. Their bracelets, a favourite ornament, are of coral or amber. Taxes and poverty are little known. Each individual marries several wives, who have all their separate occupations in the house. The flesh of the dog is preferred to that of other quadrupeds, though they abound. Vines are common; but brandy and rum are drawn from the grape. From the green substance that covers their pools they contrive to draw salt, which they also extract from the leaves of the tree called Adam's fig, which are burnt and afterwards boiled. Gunpowder is here of the best quality; and it is to this people that the eastern nations impute the invention, remarking at the same time the singularity that this country has not known war for five hundred years. This secret is said to have passed to the Peguans, who communicated it to the Chinese, the first people who made use of it in war.

† See in the Asiatic Register, vol. ii. for 1800, a curious account of the sources of the Soan and Nerbudda. These rivers rise in the table land of Omercuntuc, at a noted place of pilgrimage. The Nerbudda springs from a small well; and after a short course falls abruptly from a most stupendous height; and being joined by many streams, soon becomes a considerable river. The Soan rises from the east side of Omercuntuc, and proceeds N. to Burdy, whence it proceeds E. to the Ganges. The Hindoo temple here is magnificent; and is in the territory, or under the protection of the Goands. Rochette's map gives a more just idea of the sources of these rivers than Rennell's, in which they are confounded. The journey above quoted, by Mr. Blunt, an engineer, from Chunargur by Ruttunpour to Rajamundry in the Sircar of Ellore (which must not be confounded with the celebrared Ellora), is very interesting, as it discloses some parts of Hindostan little visited. It is to be regretted that the ingenious author has not accompanied it with a map.

INDUS.] The Indus, and its confluent streams, form the next object. This celebrated river is by the natives called Sindé, or Sindeh, and in the original Sanscret Seendho. It is also called Nilab, or the Blue River. The source, like that of the Ganges, remains unknown; for the ideas expressed even by Major Rennell on the subject are vague and unsatisfactory. His Plain of Pamer is derived from a misinterpreted passage of Marco Polo; and the whole of this region is as yet only ingenious conjecture. The mountains of Mus Tag, from which Rennell derives the Indus, as well as the Plain of Pamer in its new acceptation, are borrowed from the Map of Strahlenberg, which is indeed excellent for the time, 1737, and laid the first foundation of an exact knowledge of central Asia. But the proper mountains of Mus Tag, which are also laid down by Strahlenberg, run from W. to E., being the chain to the south of Little Bucharia; and from the map of Islenieff, 1777, it appears that the chain of mountains which gives source to the Amu or Gihon on one side, and on the other to the rivers of Little Bucharia, is that of the Belur Tag, or Cloudy Mountains; from the eastern side of which chain the Indus seems to arise. Its comparative course may be about a thousand British miles, when it forms a delta in the province of Sindi, entering by many mouths into the Indian sea.

PENJAB.] The tributary rivers of the Sindé chiefly join it in the northern half of its course, where they form the Panjab, or country of Five Rivers. From the west run into the Indus the Kameh, with its tributary streams and the Comul: from the east the Behut or Hydaspes; the Chunab or Acesinas; the Rauvee or Hydraotes; and the Setlege or Hesudrus with a tributary stream on the west, the Hyphasis: the Penjab country being on the east of the Sindé. The whole of this part of Hindostan is little known to the moderns; and it is uncertain whether the Caggar, a considerable and distant river to the East, join the Sindé, or fall into the gulf of Cutch*.

Having thus briefly described the most important rivers in the two first grand divisions of Hindostan, those of the central part must next be considered, being chiefly the Pudda, Nerbudda and Taptee, on the west; and on the east the Subanreeka, or Subunreka, which joins the sea about thirty miles to the west of that mouth of the Ganges called the Hoogley or more properly, from a city on its shore, the Ugli. The Subunreka being here considered as the N. E. boundary of Central Hindostan, is followed by the Brammee, the Mahanada; and after passing the little streams of the Sircars by the Godaveri, the last and most important stream of Central Hindostan.

GODAVERI.] The Godaveri rises at Trimbuck Nassor, in the western Gauts, more properly called the Sukhien mountains, from several sources, about seventy miles to the N. E. of Bombay[20]. This great river was little known in Europe till recent times; and is also called the Ganga, Hindoo term for a river in general, though applied by pre-eminence to the Ganges[21]. About ninety miles above its egress into the sea, the Godaveri receives a large river, the Bain Gonga, which pervades immense teak forests in a singular wild country, inhabited by savages in the centre of Hindostan, and as yet little known or explored†. The Bain Gonga was first discovered to Europeans by the late Colonel Camac, its course being about four hundred miles, while that of the Godaveri may be seven hundred. This last great river, like another Nile or Ganges, fertilizes the country; and from the benefits which it confers is esteemed sacred. Besides the Bain or Baun Gonga, it receives many tributary streams, as the Burda and others from the north; and from the south a circuitous large river, the Manzora, which passes by Beder.

* Major Rennell's excellent map may here be compared with that of De la Rochette, published by Faden 1788, which is well executed, and compiled with great care.

[20] As. Res. v. 1. 5. [21] Rennell, 244.

† D'Anville's map, 1751, supposes that the Gonga and Godaveri fall into the Bay of Bengal close to the western branch of the Ganges! The ideas of Ptolemy are more just.

NERBUDDA.] The next in consequence, in the central division of Hindostan, is the Nerbudda, which may be called a solitary stream, as it receives so few contributions. Its course is almost due west, and about equal to that of the Godaveri. The Taptee, which passes by Surat, is also a considerable river, about four hundred miles in length. To the south of this river the superior elevation of the Sukhien mountains, or western Gauts, diffuses all the rivers towards the east.

KISTNA.] In the arrangement here followed the Deccan, or most southern part of Hindostan, is considered as bounded and enriched by the Kistnu and its tributary streams The Kistna, a sacred river, rises at Balisur in the chain of Sukhien, not far to the south of Poona, and forms a delta near Masulipatam, after a comparative course of about five hundred British miles. This river rivals any Indian stream in the fertility diffused by its inundations; and the richest diamond mines in the world are in the neighbouring hills to the north. The chief tributary streams in that quarter are the Beema, passing near the Diamond mines of Visiapour; and the Muzi or Moussi by those of Golconda. But the most considerable river joins the Kistna from the south, being the Toombuddra of Rennell's last map, the Tunge-badra of D'Anville; on the banks of which have been recently disclosed many populous provinces and flourishing towns.

To the south of the Kistna appear the Pennar, the Paliar, and above all the Caveri, another large and sacred stream, which passes by Seringapatam, the capital of Mysore, and forms a wider delta than any other southern river, when it enters the sea after a course of about three hundred miles. The Caveri in general pervades a country in which public monuments, unequivocal marks of civilization and opulence, are more common than in the northern parts of Hindostan[22]. As the course of the Caveri is comparatively short, its tributary streams are unimportant.

LAKES.] Such are the principal rivers in this extensive portion of Asia. The lakes seem to be few. Rennell mentions that of Colair, during the inundations about forty or fifty miles in extent, and a considerable piece of water in all seasons, lying about midway between the Godaveri and Kistna in the new soil gradually formed by the inundations of these rivers, about twelve British miles to the north of Masulipatam. That of Chilka bounds the British Sircars on the north, resembling the German Haffs described in the first volume of this work, being a kind of salt creek communicating with the sea. The lake of Pullicat is of a similar kind. One or two lakes may also be traced in the vicinity of the Ganges and the Indus. The country of Cashmir is supposed to have been originally a large lake, as reported in the native traditions, and a considerable expanse of water still remains in the northern part of this delightful country, called the lake of Ouller or Tal, being about fifty-three British miles in circuit.

MOUNTAINS, &c.] The mountains chiefly celebrated by the Hindoos may be said to be only visible from their country, being the southern chain of the Tibetian Alps, covered with perpetual snow*. Hence they are called Himmala, from a word denoting snow; and are celebrated in the conflicts of the gods, and other mythologic fables. This name of Himmala may perhaps be the source of the Imaus of the ancients. Ptolemy not only describes an Imaus as running north and south, or the Belur Tag of the Russians and Tatars, with its ridges to the west, now called Argun, Ak Tau, &c., but another Imaus passing E. and W. to the N. of Hindostan. Justly extending the

[22] Rennel, 275.

* It would appear that this southern ridge of the mountains of Tibet, called the Himmala, while the northern is the Mus Tag, is the highest in the world, as might be expected from the vast extent of Asia, or rather the joint continent of Asia and Europe, of which this chain approaches the centre. The middle part of the chain may, as usual, be conceived to be the highest. The most elevated peak within sight of Patna has been found by repeated and careful observations of Colonel Crawford to be more than twenty thousand feet above the plain of Nipal, which is computed to be five thousand feet above the level of the sea. If we judge from the Alps, the southern ridge must be higher than the northern.

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Caucasian chain to the south of the Caspian, he has given it several local appellations, as Coronus, Sariphus, &c. His Paropamisus, on the north and west of the province so called, is to the south of Balk or Bactriana, terminating in the west, in the sandy desart called, that of Margiana. The highest summits of his Imaus he mentions as those that give source to the Indus, and which ought indeed to form one chain with his Imaus from the north, which he has here transferred from longitude 127° to 142°, an error of fifteen degrees, even supposing his general longitude just. His Emodus and Ottorocoras, ridges to the south of his Scythia beyond the Imaus, are the Mus Tag of Russian geography to the south of Little Bucharia, and must not be confounded with the Kantel, the northern boundary of Cashmir and Tibet. But the last mountainous region, being still less explored in ancient than in modern times, has totally escaped the knowledge and geography of Ptolemy; who having thus lost a space of about ten degrees in breadth, or 700 miles, it becomes doubtful whether his Imaus proceeded on the north of Tibet or of Hindostan. On the east side of the Ganges he delineates the ridges which pass from north to south, in the Birman empire, the boundary of ancient discovery; but as in Europe he was a stranger to the central parts of Germany, and in Hindostan to those of the Deccan, so by his obliteration of Tibet, great confusion arises in his geography of northern Hindostan; nor has D'Anville, who places the Brahmani in Tibet, been sufficiently aware of the difficulty. This discussion of a curious and neglected part of Hindoo geography must be dismissed with the remark, that the Emodus of Ptolemy, being by him ascribed to Serica, must be considered as the southern ridge of Little Bucharia; while his Imaus, which he supposes a continuation of the chain abovementioned, must be removed no less than seven hundred miles to the south, where it forms the southern ridge of the Tibetian Alps. On this plan, his map of Eastern Asia might be cut asunder at his 35th degree of N. latitude, as far W. as the sources of the Indus; the upper part being Little Bucharia, whose southern frontier may extend to 35°, while the under part must be transferred to the south, where our 26th degree corresponds with Ptolemy's 35th.

As the northern Imaus of Ptolemy is clearly the Belur Tag, so his southern Imaus may be safely regarded as the Himmala of the Hindoos; which may be admitted to have been known to the ancients, who were no strangers to the rich Gangetic regions of Hindostan. Nor was it absurd to consider the Himmala as a S.E. prolongation of the northern Imaus. The ridge to the east of Bengal is the Bepyrus or Sepyrus of Ptolemy; his Meandrus being the ridge which divides Aracan from Ava; his Damasus that near the river of Martaban; and his Semanthinus, seemingly connected with Thinæ, is the chain to the east of Tanaserim, this last ridge being the utmost limit of ancient knowledge in the S.E., as Little Bucharia was in the N.E.

To return to a more special consideration of the present topic, it must be observed that there is no small confusion even in the most recent delineations of the Indian ranges of mountains, or rather hills, and their exact denominations. The eastern ridge called by Ptolemy Sepyrus might in modern times be called Tipera. Those on the south of Asam might be styled the Garro mountains, being inhabited by a people so called. The ridges to the south of Nipal and Bootan are far inferior in height to the Himmala, or snowy ridge; nor can we much depend on the Tibetian names given by Du Halde. This ridge is the *Bindachul* of the natives, or chain of Vinda, which must not be confounded with the Vindius of Ptolemy. An equal defect attends the mountains from Sirinagur to Cashmir, though there be no objection to Rennell's name of Himmala. The ridge of Kuttore is properly on the north of that province, running east and west: and is followed by the Hindoo Koh of oriental geographers.

The mountains to the west of the Indus, or on the Persian frontier, seem to be the Becius and Parvetius of Ptolemy; but the modern names are little known; nor that of the ridge running parallel with the Indus on the east, called by Ptolemy Apocopus. The same author mentions mount Vindius, whence he derives the source of the Soan; now, it is believed, called Vindiah, and often mentioned in the Hindoo tales, though they seem to describe these hills as far to the west. Ptolemy's mountain of Sardonyx is not far to the east of Baroach, if that place be the Barigaza of antiquity. His Bettigus, near the royal seat of Arcat, seems a part of the Eastern Gauts, as were his Adsiathrus, Orudius, and Uxentus, which close the list of mountains known to Ptolemy in this extensive region.

In former editions, the author expressed his opinion that the mountains of Asia would, when duly examined, be found to exceed in height those of America. This prediction has since been verified, as well as that concerning the real Ganges and its sources.

The highest peaks of Himmala are now known to be from 22,000 to 27,000 English feet in height above the level of the ocean. This important investigation was begun by Col. Crawfurd, and has been since illustrated by Lieut. Webb, a diligent and exact observer*; while Chimborazo, the highest of the Andes, is computed at 20,280 feet. Mr. Webb, sent by Lord Moira to take a map of Nipaul, remitted an account of twenty-seven peaks covered with perpetual snow, of which twenty exceed 20,000 feet. The fourteenth was 25,669, exceeding Chimborazo by a mile.

The peak of Chamalasi is seen from various parts of Bengal at the distance of 232 miles, which implies a height of 28,000 feet. Another peak of Himmala, or the Mountains of Snow, is visible at 150 miles, a height of 26,000 feet. Dhaibun is estimated 20,140 feet above the plain of Catmandu, which is 4,500 feet above the ocean. The Dhawalagiri, or White Mountain, seems near the sources of the river Glandac: by Mr. Webb's estimate, corrected by the President, it seems to be 26,862 feet above the ocean: Yamautri 25,500, Dhaibun 24,740. As the southern chain of the Alps presents the highest mountains, so we may infer by analogy, as already stated, that the chief heights in Asia are in the Himmala.

Hence it will be perceived that the Hindoo orology is singularly imperfect: but what is to be expected from a people who confound terms so far as to call a mountain a Gaut or a Pass? The Gauts, peculiarly so called, are ranges which run along the western and eastern coasts of the Deccan. The former is by the natives called the mountains of Sukhien, a name which should supplant the absurd appellation of the Gauts.[23] In the language of the country, *Mali* or *Muli* implies a mountain, and *Purbet* a hill. Whether the Eastern Gauts be also called Sukhien, we are not informed; but it is probable that another native name may be discovered for this distinct range of mountains. From an interesting journey to Sirinagur, published in the sixth volume of the Asiatic Researches, it appears that the same name of Ghat or Ghaut is extended to the high ranges of mountains in the north: and D'Anville, wholly at a loss for distinct appellations of the numerous ranges in Hindostan, has, in his general map of Asia, introduced the mountains of Balagat near Visiapour, and has repeated them in his large map of Hindostan; though this name, Balagat, implies nothing but the high Gauts or superior passes.

* Calcutta Transactions, vol. xii. Moorcroft's Journey may also be consulted, and the Journal of Arts and Sciences, published at the Institute, London.

[23] As. Res. v. 1. 5.

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The Gauts peculiarly so called rise abruptly on each side, but particularly the west, forming as it were enormous walls, supporting a high terrace or table land in the middle. This elevated track, passing through a great part of the Maratta territories to the north of Mysore, is termed in general the Balla-Gaut, through its whole extent, while low passes are called Payen-Gaut [24]. Opposite to Paniany, on the western coast, there is a break or interruption of the mountains, about sixteen miles in breadth, chiefly occupied by a forest; exclusive of this gap the mountains of Sukhien extend from Cape Comorin to Surat, at the distance of from forty to seventy miles from the shore [25]. Their effect on the seasons has been already mentioned; and it ceases at Surat, where the S.W. wind carries uninterrupted moisture over Hindostan. The high terrace in the middle of the Deccan receives little rain; and the coast of Coromandel, which receives its rain from the N. E. monsoon, is also of a dry soil as already described *.

Desert.] The sandy desert on the east of the Indus must not be omitted, extending in length between four and five hundred British miles, and in breadth from sixty to a hundred and fifty. Of this great desert the accounts are imperfect; but it is styled that of Agimere, and seems to have been known to Herodotus. Such wide expanses of barren sand form features peculiar to Asia and Africa.

Forests.] Of this extensive portion of Asia a great part remaining in primitive wildness, there are large forests in various quarters, particularly near the mouth of the Ganges, and in the wide unexplored regions on the west of the Sircars. These forests surpass in exuberance of vegetation any idea which Europeans can imagine; creeping plants of prodigious size and length, extended from tree to tree, forming an impenetrable gloom, and a barrier, as it were, sacred to the first mysteries of nature.

Botany.] The general observations which were made on India beyond the Ganges, apply with still greater propriety to the botany of Hindostan. A more fertile soil, and a climate better adapted to the most profuse luxuriance of vegetation than the well watered tracts in this vast peninsula, cannot possibly be found in any part of the known world. The liberality with which nature has scattered over this favoured country the choicest of those plants that contribute to the sustenance, the convenience, and elegance of human life, is boundless, and almost without competition: double harvests, two crops of fruit from many of the trees, and from most of the rest a copious and regular supply during the greater part of the year, are the great bases that support its swarming population, while its timber of every quality, its plants of medicinal virtue, its numerous and exquisite dying drugs, and its cottons and other vegetable articles of cloathing, offer to its inhabitants the materials of enjoyment and civilization †.

The most distinguishing feature in tropical landscapes is the multitude of lofty trees of the palm kind; all these rise with a simple trunk to a considerable height, terminated by a tuft of large leaves, and wholly destitute of branches except while they are in fruit: of these many species are natives of India. The cocoa-nut tree, perhaps the most widely diffused of any, is found in abundance on the coasts of Malabar and

[24] Rennell, cxxvii.

[25] Rennell, 276, and his map of the Deccan, 1800, in which the southern mountains are well expressed. Among the animals are numerous elephants; and if we believe Wesdin, 214, wild oxen ten feet high, with fine ash grey hair. The Arni of the north are black cattle, said to be fourteen feet high! Ib. note.

* The composition of the mountains has been little explained. Col. Hardwick presented to me the geologic specimens of his journey to Sirinagur. They are chiefly argillaceous schistus, with quartz and granite rolled by the Alikundra.

† Hortus Malabaricus. Roxburgh's Plants of the Coast of Coromandel.

Coromandel: its fruit supplies an agreeable nutriment, and the fibrous covering of the nut is manufactured into the most elastic cables that are known. The areca palm is another of this family, of rare occurrence in a truly wild state, but cultivated over all India for its nuts, which, mixed with the leaves of the betel pepper and a little quick-lime, are in general request for chewing as tobacco is used in Europe. The smaller fan-palm is distinguished for its broad fan-shaped leaves, which are used for writing on and for thatching: its wood is in high esteem for rafters; and of its juice the best palm toddy, the common distilled spirit of the country, is made. This, although a large tree, is far inferior to the great fan-palm which abounds on the lower mountains of the Carnatic; each leaf of this vast tree is capable of covering ten or a dozen men, and two or three of them are sufficient to roof a cottage. The most beautiful of all, the sago palm, is also found here, though not so plentifully as in some of the Indian islands. Besides these may be mentioned the elate sylvestris, whose sweet farinaceous fruit is the favourite repast of the elephant; the caryota urens, a handsome lofty tree; and the plaintain, distinguished by its tuft of broad simple light green leaves, and its wholesome farinaceous fruit.

Of the other fruit-bearing trees the number is so great, and they are for the most part so little known, even by name, to Europeans, that only a few of the principal need be here mentioned: these are two species of the genus known to botanists by the name eugenia, and remarkable for the sweetness and rose flavour of their fruit; and the spondias dulcis, whose sweetness, pleasantly tempered with acid, renders it peculiarly agreeable in this hot climate. The pillaw is a tree of equal singularity and use: from its trunk and larger branches are produced large fibrous bags, sometimes of the weight of twenty-five pounds, which are filled with nuts like the chestnut, and resembling the almond in flavour. The dillenia indica is remarkable for its beauty, and valuable for its large pomaceous fruit of a pure acid, and equal to the white lily in fragrance. The averrhoa carambola produces three crops of fruit in the year, and another of the same genus, the a. bilimbi, is in a manner covered with large juicy berries of the size of a hen's egg, and resembling the grape. The mango however is reckoned the most exquisite of the Indian fruits, and is found in considerable abundance, both wild and cultivated, through the whole peninsula: nor ought the carissa caranda to be omitted, or the elephant apple, almost equally a favourite with the animal whose name it bears, and with the native Hindoos.

Of the trees whose produce is used in medicine or the arts, the most worthy of notice are the cassia fistula; the tamarind; the gambogia, from whose bark exudes the gum of the same name; the strychnos nux vomica; the laurus cassia, whose bark is a common substitute for cinnamon; cæsalpina sappan, a red wood used in dying strychnos potatorum, the fruit of which, called the *clearing nut*, is in general use for clearing muddy water; semecarpus anacardium, or *marking nut*, used for giving a durable black stain to cotton; and gossypium arboreum, the tree cotton. The chief timber trees are the teak, used specially for ship-building; a large tree called by botanists gyrocarpus, whose strong light wood is in great request for rafts, or catamarans; the ebony; the ferreola, the hardest of all the Indian woods; the nauclea cordifolia, of a close compact grain like boxwood; and the dalbergia, a dark grey wood with light coloured veins, very heavy, and capable of a most exquisite polish; it is much used for furniture.

A few other trees require notice from their size or beauty, such as the banyan tree and Indian fig; the hibiscus ficulneus is remarkable by its magnitude, and the profusion of its elegant blossoms, and is of peculiar value in a tropical climate, as hardly any insects are found under its shade. The bombax ceiba rises with a thorny trunk eighteen feet in circumference to the height of fifty feet without a branch; it then

throws out numerous boughs, which are adorned in the rainy season with purple blossoms as large as the open hand, and these are succeeded by capsules filled with cotton. The shrubs and herbaceous plants are innumerable, and multitudes would be well worth recording for their beauty or use, if the nature of this work allowed an opportunity; we cannot omit however the indigo and Indian madder whence the beautiful colours of the Indian chintzes are procured: nor the datura metal, a shrub adorned all the year with large trumpet-shaped blossoms of the purest white. The nyctanthes hirsuta, and the jasminum grandiflorum, boast the most fragrant blossoms of the whole east, the former perfuming the night, and the latter scenting the day. The gloriosa superba, cecropegia candelabrum, and Indian vine, form by their union bowers worthy of Paradise; and the butea superba, a small tree, by the striking contrast of its green leaves, its black flowerstalks, and its large scarlet papilionaceous blossoms, attracts with its ostentatious charms the notice and admiration of the most incurious.

Zoology.] For an ample account of the zoology of Hindostan the curious reader may consult Mr. Pennant's view of this country, this being the peculiar province of that great naturalist. The numerous cavalry, which form the armies of the Hindoo princes, imply great numbers of horses; and the breeds most celebrated are those of Lahore and Turkistan, but the grandees are supplied from Persia and Arabia. The inferior breeds, though ugly, are active; and in some regions there are ponies not exceeding thirty inches in height [26]. The horses of Tibet, generally pyed, are often used in Gangetic Hindostan. The animal called the wild mule, and the wild ass, sometimes pass in herds to the northern mountains, from the centre of Asia, and the desart of Cobi.

The cattle of Hindostan are numerous, and often of a large size, with a hunch on the shoulders. The sheep are covered with hair instead of wool, except in the most northern parts.

Antelopes abound of various beautiful kinds, particularly that called the Nilgau, which is of a considerable size. Bernier, the most intelligent of travellers in India, gives an account of the chace of the antelopes by means of the hunting leopard, trained as in Persia to this sport *.

The Arabian camel, or that with a single hunch, is not unfrequent about Patna. The elephant has been frequently described; the usual height of this intelligent animal is about ten feet, and one of fifteen is esteemed a gigantic prodigy. Apes and monkies abound in various regions of Hindostan; and the orang outang is said to be found in the vast forests on the W. of the Sircars. The dogs are generally of the cur kind, with sharp erect ears, and pointed noses: the smallest size is that kept by the Pariars, or degraded poor, rendered doubly miserable by the fanatic prejudices of the abominable system of the Bramins. The other animals are wild boars, bears, wolves, foxes, jackalls, hyenas, leopards, panthers, lynxes; in the north musk weasels, and many other quadrupeds of inferior size.

The lion seems to have been always unknown in Hindostan, where the ancient sculptors have attempted in vain to represent an animal which they never saw; but Mr. Pennant assures us that they are found near the celebrated fort of Gwalior, about Marwah, and near Cashmir. The royal tiger of Bengal is however a far more terrible animal than the stoutest lion; and was known in classical times, as Seneca the poet calls it *Gangetica tigris*, or the Gangetic tiger. Such is their size and strength that they are said to carry off bullocks the height of some being said to be five or six feet, and the feline length in proportion. Parties of pleasure, on the isles at the mouth of the Ganges,

[26] Pennant, vol. ii. 239.

* Those of Tippoo are in the Tower of London; their legs are much higher than those of any other feline animal.

have often been shockingly interrupted by the sudden appearance of the tiger, prepared for his fatal spring, which is said to extend a hundred feet, not improbable when compared with that of the cat. Such is the nature of the animal, that if disappointed in this first and sole leap, he couches his tail and retreats. The rhinoceros with one horn, an animal of the swamps, also abounds in the Gangetic isles.

To enumerate the various birds, fishes, and insects of Hindostan, would be a vain and and idle attempt in a work of this nature. While the turkey is certainly a native of America, wild peacocks abound in Tibet and Ceylon; our common fowl are also found wild in the jungles, whence they are called jungle fowl. Hence it seems reasonable to conclude that as these animals have been diffused over the civilized world from time immemorial, they must have passed from Hindostan to Persia, whence they were conveyed to the western countries.

MINERALOGY.] The mineralogy of Hindostan may be opened by its most distinguished and peculiar product, celebrated in all ages of the world, that of diamonds, which are indeed also found in Brazil, but of far inferior quality. It is now well known that Sir Isaac Newton predicted, in his Optics, from its rich and peculiar effusion of light, that the diamond would be found to be an inflammable substance. This prediction has been recently fulfilled by numerous experiments; and it is now universally admitted by chymists that the diamond is only a very pure species of coal. This substance is however the most hard, transparent, and brilliant of all minerals; and is commonly colourless, but is found occasionally of a citron yellow, grey, brown, or black, but very rarely green or blue. The more common form is round, or flatted as it were by attrition; but its chrystalization is the octahedron, or double quadrangular pyramid, and the dodecahedron, with their varieties; and sometimes it occurs in cubes. When examined with a microscope of great power, the texture sometimes consists of irregular fibres, but is generally laminated, or composed of minute layers, like the other genuine gems. It is found in beds of torrents, or in yellow ferruginous earth, under rocks of quartz or sand stone. That of the Brazils is found in a kind of pudding stone impregnated with iron ochre.

The chief and most celebrated diamond mines are those near Visiapour and Golconda, both near streams that flow into the Kistna in the southern division of Hindostan; Golconda being in the territory of the Nizam, while Visiapour belongs to the Marattas *.

Raolconda, a famous diamond mine in the territory of Visiapour, about forty British miles N. W. from the junction of the Beema and Kistna, seems to be the most noted of those in that quarter [27]. A district on the river Mahanada, to the S. of Sumboulpour, is also noted for this rich product; as is Gandicotta, on the southern bank of the river Pennar [28].

The mine near the Mahanada is not the sole example of the diamond being found to the north of the Deccan; for this mineral unexpectedly occurs so far north as Penna, in the territory of Bundelcund, about 60 British miles to the south of the river Jumna, which flows into the Ganges [29]. Bundelcund is a mountainous track, about a hundred miles square, subject to its Raja.

Next in value to the diamond are the sapphire and the ruby, which are chiefly found in the Birman territories; but the ruby also occurs in Ceylon, which likewise produces an inferior kind of sapphire, the topaz, many curious tourmalins, and other precious stones, minutely described by Thunberg, among which one of the most peculiar is

* Colore, another diamond mine, is n the southern bank of the Kistna, not far from Condavir. Rennell, 290.

[27] Rennell, 253.

[28] Ib. 240, where it is not unreasonably inferred that Ptolemy's Adamas is this river.

[29] Ib. 233.

the cat's eye, which, like the Italian girasol, has a peculiar reflection, partaking of the nature of felspar [30].

Among the metals gold is found in the rivers which flow from Tibet into the Ganges and Indus; but no gold mines seem ever to have been known in Hindostan, which has rather been celebrated for attracting this metal in commerce from other countries. On the other hand Tibet, a mountainous country, abounds in this precious metal. Silver seems rare in general throughout the oriental regions; and there is no indication of this mineral through all India. Thunberg mentions iron ore and plumbago among the minerals of Ceylon; but says nothing of copper, which seems also little known in Hindostan. It is indeed to be regretted that more curiosity has not been excited by the mineralogy of our possessions in Bengal, and the other regions of this interesting country; but the attention of the English to this grand branch of science is very recent, and even the avarice of adventurers cannot be tempted to explore what is not known to exist.

MINERAL WATERS.] The natives sometimes seek for the cure of diseases by bathing in the sacred streams, and their devotion to water in general seems to prevent their exploring any medicinal sources. Yet there are few exceptions, and several warm springs are reputed sacred.

NATURAL CURIOSITIES.] Among the singular features of nature may be mentioned the appearance of the provinces on the rivers, during the season of inundation, when an access is opened by numerous channels to places before inland. The grand aspect of the northern mountains covered with snow, and the wide desart on the east of the Indus, are also grand features; as is the high table land of Mysore, supported by natural buttresses of mountains. The Sunderbunds, and prodigious forests, have been already mentioned. The detached ridges of rock, sometimes crowned with strong fortresses, may also be named among the natural curiosities. But one of the most noted in the Hindoo tradition is the Gangoutra or fall of the Ganges, sometimes called the Cow's Mouth. According to the report of a Bramin, who pretended to have visited the spot, the Ganges springs from the Peak of Cailasa, seven days' journey to the south of Ladac or Latac, the capital of a small Tibetian principally [31]. This peak is about two miles to the south of Mansaror; and the river thence flows, for about seven or eight miles, when it finds a subterranean passage, "until it again emerges in the country of Kedar Nauth, at the place called Gungowtry." This place is marked in Mr. Arrowsmith's map as situated on that source of the Ganges called the Aliknundra; and it seems proved, by Mr. Hardwick's journey to Sirinagur, that the veneration of the natives, and the Braminical stations on its shores, confirm the Bramin's report, and proclaim the Aliknundra to be the real and genuine Ganges, being perhaps the furthest source erroneously laid down in the map of Tibet by the lamas, (if these supposed sources do not rather flow into the Indus;) as almost every name and position laid down by them will probably be found extremely inaccurate. It seems probable that the source of the Ganges is in a calcareous country, whence the river easily works itself a subterraneous passage, as several streams in the north of England, and other calcareous countries. Adam's bridge is also a noted fable of the Bramins, for in their strong imaginations and weak judgments every thing assumes a fabulous tinge. It is a kind of sand-bank, with some isles stretching from a promontory to the opposite isle of Ceylon: but the name of Rama has being exchanged by the Mahometans for that of Adam.

The cataract of the river Cavery near Satteagala is thus described by a recent traveller *.

[30] Thunberg, iv. 220. See the account of Ceylon, ch. 5. of this article.
[31] As. Res. v. 45. vi. 102. * Buchanan, ii. 166.

"The

" The northern branch of the river is the most considerable, and soon divides into two channels, which form a smaller island, named *Nellaganatitu.* The channel of this branch next the northern continent is the smallest, and is nearly level until it comes opposite to *Gangana Chuki*, a place on the large island about three miles from its upper end. There it precipitates its water over a perpendicular rock, I suppose nearly 200 feet high. The stream is very considerable ; but is divided by a small island into two great branches, and by large rocks into four or five portions, which before they reach the bottom are quite broken into foam. The water which runs between the two islands is the most considerable portion of the northern branch of the river. It runs with vast rapidity over and among immense rocks, until it comes to Gangana Chuki, where it rushes down into the abyss, which a little way below receives also the other portion. There it is hidden from human view in a cloud of vapour, which is formed by its violence, and which is at times visible even from Satteagala. From this circumstance I could not ascertain how far this fall is entirely perpendicular. If it be quite so, the whole height will be about 100 feet; but at times I thought I could see obscurely through the cloud a projection of the rock, which divided the fall into two stages. I have never seen any cataract, that for grandeur could be compared with this, but I shall not attempt to describe its broken woody banks, its cloud of vapour, its rainbow, its thundering noise, nor the immense slippery rocks from whence the dizzy traveller views the awful whirlings of its tumultuous abyss. All these, except in magnitude and sublimity, exactly resemble those of the other water-falls that I have seen. The pencil of an artist might be well employed in imitating its magnificent scenery, and would convey a better idea of its grandeur than my power of description can venture to attempt."

CHAPTER II.

GANGETIC HINDOSTAN, OR THE COUNTRIES ON THE GANGES.

Extent and Divisions. — British Possessions. — Revenue. — Government. — Army. — Navy. — Cities and Towns. —Surrounding States. — Bootan. — Nipal. — Sirinagur.

Extent and Divisions.] THIS grand division of Hindostan extends from the eastern boundaries of Bengal to the country of Sirhind, a length of about a thousand B. miles. The greatest breadth, from the sources of the Chumbul to the mountains of Sewalik, may be about four hundred and fifty B. miles; and the least, on the west of the province of Bengal, about two hundred and thirty. It comprises the provinces of Bengal, Bahar, Allahabad, Oude, Agra; with part of Delhi and Agimere, and of Malwa in the south; most of them equal in celebrity to any in Hindostan, and the chosen seats of the power of the Monguls, as well as of mighty kingdoms even in classical times.

British Possessions.] Bengal, Bahar, with Benares, and some other districts to the west, forming the chief basis and centre of English power in this country, it is proper first to consider them apart, and then proceed to some account of the other provinces. The British settlements here extend about five hundred and fifty miles in length by three hundred in breadth, in themselves a powerful kingdom. The native population is computed at ten or eleven millions of black subjects; exclusive of the English, whose number seems not authenticated. Yet Sir William Jones, from the actual enumeration of one province, concluded that not less than thirty millions of Hindoos were contained in all the British possessions in Hindostan. But Major Rennell estimates the entire population in the time of Aurunzeb at sixty millions; and it seems unreasonable to think that repeated wars have increased the population, or that one half is subject to the British sceptre.

Revenue.] The revenue of these British provinces is computed at 4,210,000l. sterling the expence of collection, military and civil charges, &c. 2,540,000l; so that the clear revenue is 1,670,000l[1]. They are well situated in respect to security from foreign invasion: were obtained in 1765, under circumstances rather favourable, as the charge of usurpation might have been retorted against any adversary: and since they were in our possession, they have enjoyed more tranquillity than any part of Hindostan has known since the reign of Aurunzeb.

Government.] The government of Bengal, and its wide dependencies, was first vested in a Governor General and a Supreme Council, consisting of a president and eleven counsellors; but in 1773 these were restricted to four with Warren Hastings the Governor General, who were to direct all affairs, civil and military, in the kingdoms of Bengal, Bahar, and Orissa; and to controul the inferior governments of Madras on the E., and Bombay on the W., with Bencoolen in the island of Sumatra[2].

[1] Rennell, cxiv.

[2] Pennant, ii. 327.

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The Court of Judicature consists of a chief justice and three other judges, with civil, criminal, naval, and ecclesiastical jurisdiction. The Hindoos are governed by their own laws; but it is to be wished that in these and the other British possessions the abominable influence of the Bramins were extinguished, and these fanatics themselves degraded to the cast of Pariars; or rather that the casts were totally abolished, as the most shocking obstacle to all the best feelings and exertions of human nature that ever was imposed by crafty superstition upon consummate ignorance and simplicity. Christian charity, and the mutual benefits of society, with what our immortal poet styles the milk of human kindness, might then supplant a dreary superstition which estranges man from man, and is accompanied, even in its priests, by practices the most degrading to human nature *.

Army.] The military establishment in Bengal is always respectable, but varies according to the situation of affairs. The British troops are supported by the Sepoys †. a native militia, who are accustomed to have numerous idle followers. so that the effective men seldom constitute more than a quarter of the nominal army. A force of twenty thousand British soldiers might probably encounter and vanquish two hundred thousand blacks or Hindoos. The decisive battle of Plassey, which secured to us the possession of these opulent provinces, was gained by the formidable array of nine hundred Europeans [3]. It would seemingly be no difficult acquisition, and might prove most salutary for the tranquillity and happiness of the Hindoos, if their whole extensive country were subjected to the British power. For these subjects of the wise Bramins are of all nations the most miserable; and political freedom is to them as unknown as real practical wisdom is to their teachers. In human affairs the smaller evil is commonly the sole object of preference.

Navy.] A navy of considerable force might be equipped, and the ships constructed of teak wood, as it is supposed to surpass any others in duration.

Cities and Towns.] The chief city of Bengal, and of all the British possessions in Hindostan, is Calcutta, which is said to contain not less than half a million of souls. The latitude is 22° 33′ north; and the longitude 88° 28′ east from Greenwich.

" Generally speaking, the description of one Indian city is a description of all; they being all built on one plan, with exceeding narrow, confined, and crooked streets; with an incredible number of reservoirs and ponds, and a great many gardens interspersed. A few of the streets are paved with brick. The houses are variously built: some of brick, others with mud, and a still greater proportion with bamboos and mats: and these different kinds of fabrics standing intermixed with each other, form a motley appearance: those of the latter kind are invariably of one story, and covered with thatch. Those of brick seldom exceed two floors, and have flat terraced roofs. The two former classes far out-number the last, which are often so thinly scattered, that fires, which often happen, do not sometimes meet with the obstruction of a brick-house through a whole street.

" Calcutta is, in part, an exception to this rule of building; for there the quarter inhabited by the English is composed entirely of brick-buildings, many of which have more the appearance of palaces than of private houses: but the remainder of the city, and by much the greatest part, is built as I have described the cities in general to be. Within these twenty or twenty-five years Calcutta has been wonderfully improved, both in appearance and in the salubrity of its air: for its streets have been properly

* See in the Asiatic Researches, iv. 336, the matricides and infanticides of the pious, simple, and philosophic Bramins; and, v. 372, their institutions of human sacrifices! Yet their cruel mercy, p. 381, ordered that a woman should never be sacrificed — except on the funeral pile of her husband! Such are the objects of antiquarian veneration: and such are the favourite sages of Voltaire!

† From the Persian *Sipahi*, a horseman.

[3] Rennell, xcv.

drained,

drained, and the ponds filled up; thereby removing a vast surface of stagnant water, the exhalations from which were particularly hurtful. Calcutta is well known to be the emporium of Bengal, and the seat of the Governor-General of India, It is a very extensive and populous city, being supposed at present to contain at least 500,000 inhabitants. Its local situation is not fortunate; for it has some extensive muddy lakes, and a vast forest close to it. It is remarkable that the English have been more inattentive than other European nations * to the natural advantages of situation in their foreign settlements. Calcutta is situated on the western arm of the Ganges, at about one hundred miles from the sea; and the river is navigable up to the town, for the largest ships that visit India. It is a modern city, having risen on the site of the village of Govindpour, about ninety years ago. It has a citadel, superior in every point, as it regards strength and correctness of design, to any fortress in India: but on too extensive a scale to answer the useful purpose intended, that of holding a post in case of extremity; since the number of troops required for a proper garrison for it could keep the field. It was begun immediately after the victory at Plassey, which insured to the British an unlimited influence in Bengal: and the intention of Lord Clive was to render it as permanent as possible, by securing a tenable post at all times. Clive, however, had no foresight of the vast expence attending it, which perhaps may have been equal to two millions sterling[4]."

In this grand capital of British Asia the mixture of people and manners presents a picturesque and interesting scene. The black Hindoo, the olive-coloured Moor or Mahometan, contrast with the fair and florid countenances of the English; and the charms of the European damsel receive a foil from the dark Hindoo beauties. To the luxuries of the Asiatic, are added the elegance and science of the English, life. Even the newspapers are drawn up with care, and printed with elegance: and the Asiatic Society, instituted by the late admirable Sir William Jones, may perhaps rival the Academy of Inscriptions at Paris, if the papers of the latter were adopted as a model: and that unaccountable taste, or rather infatuation for visionary antiquities, attempted to be discussed by crude knowledge, and inaccurate ratiocination, were finally dismissed from British culture, to which it seems peculiar and indigenous. No human pursuit can be more useless, for it has not even the utility of amusement; and when founded on the monstrous tales and traditions, and innumerable forged manuscripts of the Bramins, who pervert every science and institution to the purposes of their own influence, it is no wonder that this singular pursuit should diffuse darkness instead of light; that every dissertator should confute his predecessor by his own pundit and his own manuscripts, always as ancient as Brahma, if they be not of the present century: so that the more we read the less we know; and science becomes another term for confusion. With such exceptions, and they are not numerous, the Asiatic Researches form a noble monument of British science in a distant country. The recent institution of a college or university at Calcutta, by the Marquis Wellesley, deserves the greatest applause, for the extent and liberality of the plan. Besides Hindoo, Mahometan, and English law, and the local regulations, there are to be professors of civil jurisprudence, political economy, geography, history, &c.; but in the modern extent of science, naturalhistory is far too wide for one or two professors, and it is scarcely possible for a good botanist to be at the same time deeply skilled in zoology, or in mineralogy, far less in chymistry †.

* Surely not more than the Dutch. It arises from imitation of the sites in their own countries, while in hot countries the situation should be high.

[4] Rennell, 58, 59.

† Asiatic Register, vol. ii. p 106. The languages to be taught are Arabic, Persian, Sanscrit, Hindostanee, Bengal, Telinga, Maratta, Tamula, and Canara.

The commerce of Calcutta is very great in salt, sugar, opium, silks, and muslins, &c.: the poppy which yields the opium is particularly cultivated in the province of Bahar. Musk, borax, and other commodities, used to be imported from Tibet, in exchange for European cloths and hardware; but this trade is probably interrupted since Tibet became subject to the jealous Chinese. On the Ganges are transported to Asam cargoes of salt, in exchange for gold, silver, ivory, musk, and a particular kind of silky cotton. The cowry shells, used as a small coin, are imported from the Maldives in exchange for rice. The fine muslins are chiefly fabricated in the rainy season, from May to September, and with calicoes form a great part of the exports to Europe.

In the eastern part of the British possessions the most considerable town is Dacca, beyond the principal stream of the Ganges, but defended on the east by the Megna or Burrampoot. Dacca is celebrated for manufactures of the most delicate muslins, so much in request in the European market, and which are made from the cotton of the district. It was once the capital of Bengal, and was succeeded by Mushedabad, a modern city. Hoogley, or Ugly, is a small but ancient city, about twenty-six miles above Calcutta, on the grand western branch of the Ganges, which thence receives its name.

Patna is the capital of the province of Bahar, situated about 400 miles N. W. from Calcutta, being tolerably fortified, and a place of considerable trade, most of the saltpetre in particular, exported to England, being made in the province of Bahar. Rennell argues that Patna is the ancient city of Palibothra. Dr. Robertson infers that it was Allahabad, which is also the opinion of D'Anville. Sir William Jones supposes that Palibothra stood at the junction of the Soan or Sona with the Ganges; that is, he nearly coincides with Major Rennell [5]. Yet upon the whole the unprejudiced inspector of Ptolemy may perhaps prefer Allahabad.

Benares approaches to the western frontier of the British possessions, the district having been ceded to the East India Company in the year 1775. It is a rich, populous, and compact city, on the northern bank of the Ganges, about 460 miles from Calcutta. Benares, anciently called Casi, was the most early seat of Braminical knowledge, or quackery, in the north. It was not till the tenth or eleventh century of the Christian æra that this baleful sect overturned the worship of Boodh in the Deccan. The Bramins seem to be first mentioned by Strabo, who distinguishes them from another race of Indian philosophers called Germani; who were probably the Gymnosophisti of other authors, and worshippers of Boodh *.

On leaving the British possessions, and proceeding towards the west, first occurs Allahabad, in the province so called, at the confluence of the Jumna and the Ganges, a city belonging to the Navab or Nabob of Oude, but of little consequence †. Not far to the S. W. of Allahabad are the diamond mines of Penna, in the small detached province of Bundelcund.

Lucknow is the present capital of Oude, having superseded Fyzabad, a city on the Gogra, near the ancient city of Aiudh, which seems to have given name to the province.

[5] As. Res. iv. 26. Mr. Wilford, with his usual imagination, argues for the mouth of the Cosa on the opposite side of the Ganges!

* The Brachman nations of Pliny are the Barmahs, or Birmans, of modern times, who had probably invaded and seized a great part of Eastern Hindostan. Perhaps even the Βραχμανοι of Strabo are the *Rachans* or Priests of the Birmans.

Where was Pliny's powerful kingdom of Andara in Gangetic Hindostan, and Automela on the Indus? That writer's geography is commonly neglected, though one of the best of antiquity.

† It was ceded to the English in 1798, by a treaty between the Navab Sandut Ali Khan and Sir John Shore, now Lord Teignmouth.

At a considerable distance to the N. W. is Berilli, a small but noted town near the northern frontier.

ANCIENT CAPITALS.] About 50 British miles W. from Lucknow stands Canoge, anciently the capital of a kingdom. Before proceeding to Agra and Delhi, modern capitals of Hindostan, it may be proper to observe that the kingdoms celebrated by the Braminical, or northern traditions and fables, were chiefly in this part of Hindostan. The reader is sometimes bewildered by the use of native terms, or uncommon orthography, without any explanation; but the learned Jones informs us that king Nanda, and the noted Chandragupta, the classical Sandracottus, reigned at Patna; and a kind of chronology of their successors may be found in the Asiatic Researches[6], with tables of the kings of Audh, or Oude, and Vitora, or Delhi, both in the solar and lunar line, as they are divided by the wildness of Hindoo imagination; with another of the kings of Magada, or Bahar, the last of which contains Nanda and Chandragupta. These lists are inaccurate and confused, the Bramins being more conversant in quadrillions, trillions, and billions of years, than in discussing the little dates of European scholars *. The list of Rajas of Hindostan, from the time of the deluge, published by Anquetil du Perron, begins with Bhart who resided at Hastnapour on the Jumna, now Delhi; but the royal seat was afterwards transferred to Canuche, and the Princes often passed the mountains of Sewalik to encounter the *Chinese*, probably some wrong interpretation for Tibet. Benares is also mentioned as a capital; and it is boldly asserted that the eighty-fourth Raja, Andarjal, conquered all Hindostan, with Ceylon; a conquest also effected by the hundred and ninth Raja. This list, which is certainly far superior to any of the kind, closes with the conquest by the Mahometans, A. D. 1192. Perhaps our possessions in the south may disclose some chronologies of the kings in that quarter, particularly the Balharas. If any thing can be done in arranging the fictions of the Bramins, and eliciting some shadow of truth, it must be begun by establishing grand land marks of chronology, established by various intelligence derived from remote quarters; and the safest course will be to trace it backward from modern to ancient times, and thus laying a solid foundation, instead of beginning with the fabulous, in the vain hope of finding truth.

AGRA.] These capitals of ancient kingdoms in this quarter were followed by Agra and Delhi. The great and good emperor Acbar constituted Agra the capital of the Mogul empire about A. D. 1566. It was then a small fortified town; but it soon became an extensive and magnificent city, and has as rapidly declined.

DELHI.] To the N. W. of Agra, near the confines of Sindetic Hindostan, stands the celebrated city of Delhi, the Mahometan capital of India, said to be of considerable antiquity by the name of Indarput. That intelligent traveller Bernier computes the extent of Delhi, in 1663, at three leagues, exclusive of the fortifications; and he represents Agra as of wider circuit. This metropolis may be said to be now in ruins; but there are many noble and splendid remains of palaces with baths of marble[7]. The grand mosk is a magnificent edifice, of marble and red free stone, with high minarets, and domes richly gilt. One of the quarters of the city has been very thinly inhabited, since the dreadful massacre by Nadir Shah, in which one hundred thousand people are said to have perished. The royal gardens of Shalimar are said to have cost one million sterling, in canals, pavillions, &c. decorated with great profusion. When our author visited this city, in 1793; he was introduced to the last remnant of the Moguls, Shah Allum, then seventy years of age and blind, being here kept in a kind of captivity by Sindia the Maratta chief.

[6] v. 318.

* The words used for those high numbers are authorized by Sir William Jones, ii. 115; but they are unknown to Johnson.

[7] As. Res. iv. 417.

Oujein.] The city of Agimere, or Ajimer, may be more properly allotted, with the greater part of that province, to Sindetic Hindostan: but Oujein may be considered as the furthest city in the south of that portion now under view. Oujein is about six miles in circumference, surrounded by a strong wall, with round towers. The houses partly brick, partly wood, covered with lime, trass, or tiles: the Bazar, or market is spacious, and paved with stone: there are four mosks, and several Hindoo temples, with a new palace built by Sindia. On the south runs the river Sippara, which here suddenly turns north, pursuing its course into the Chumbul, the last a large river, not less than three quarters of a mile in breadth at some distance from its egress into the Jumma[8]. About a mile to the north are ruins of old Oujein, brick walls, stone pillars, pieces of wood, and various utensils, with ancient coins. The superjacent soil is a black mould; and this catastrophe must have happened when the river changed its course to the westward, by some aqueous concussion of nature, 1800, or 800 years ago, as usual in Hindoo chronology.

Turning to the east, the river Nerbudda may for a part be considered as the most southern limit of Gangetic Hindostan; yet concerning Gurrah, a city or town of some note, there are no details; and the other names are too unimportant for general geography. But the noted fort of Gwalior must not be omitted, being a striking object in Hindoo topography. The insulated rock on which it stands is about four miles in length, but narrow: the sides are almost perpendicular, from two to three hundred feet, above the surrounding plain[9]. On the top there is a town with wells and reservoirs, and some cultivated land. This celebrated fortress, which is about 80 miles to the south of Agra, was taken by surprize by a few English under Major Popham in 1779. Such isolated forts on rocks were not uncommon in ancient India; and that of Aornos is distinguished in the history of Alexander. A theorist might argue that these are the summits of ancient mountains, immersed in the rich vegetable soil of Hindostan, which has been swept by primeval waters from the mountains of Tibet, now barren rocks, and even from the elevated desert of Cobi, which in consequence was left a barren mass of sand.

Surrounding States.] Before closing this brief delineation of Gangetic Hindostan, the most large, celebrated, and best known quarter of that extensive region, it may be proper to offer some remarks on the surrounding states on the E. and N. The Roshawn of Rennell is the same with Aracan, being merely a Hindoo term for that country. His Cossay is only another name for Meckley, or the country of the Muggaloos, a people between Asam on the north, and Aracan on the south, whose chief town is Munnipura[10]. These eastern tribes of rude mountaineers are little known; but approach to the savage state. Asam has been already briefly described in the account of the river Burrampoot; but to the west open the wide and obscure regions of Tibet. It would seem, from Mr. Hardwick's journey to Sirinagur, that the name of Bootan includes most of the south of Tibet, particularly those regions which are omitted in the doubtful map of the Lamas, who, in their account of these frontiers, use Chinese or Tataric terms, or perhaps rather invented appellations at least equally useless, as they are alike unknown to the Hindoos and the natives. The names indeed throughout Du Halde's maps of Tatary and Tibet are far too numerous, a circumstance usual in the old invented maps, in the first ages of European geography, in which even farms and huts were sometimes inserted. It is to be regretted that Turner, in his journey, has not indicated the western limits of Bootan, nor the native reports concerning the adjacent countries. Of Nipal there is a short account by a Jesuit[11], whence the maps might be

[8] As. Res. vi. 40, [9] Hodges, 139. [10] As. Res. v. 223 and 230.
[11] As. Res, ii. 307. Giuseppe Bernini, who died in 1753. His works were printed at Verona in 1767.

somewhat improved; that of Du Halde closing with Nialma, and some names not to be found in the genuine accounts, so that the Lamas appear to have been stopped in their progress by the snowy ridge of Himmala. The recent account by Bernini bears that, in passing the frontier mountains, suddenly appears the extensive plain of Nipal, about 200 miles in circumference, resembling a vast amphitheatre covered with populous towns and villages. To the north of the plain is the capital Catmandu, containing about eighteen thousand houses, which might yield a population of seventy or eighty thousand. To the S. W. is Lelit Pattan, where the author computes twenty-four thousand houses; this part of the country bordering to the south on the small state of Macwanpur between Nipal and Hindostan. The third principal city stands to the east of the last mentioned, and is called Batgan. Timi and Cipoli are also large towns; and all these names being unknown to the Lamas it is evident that their progress was here impeded; and in the south and west of Tibet in particular deserves no credit. In Nipal there are two religious sects, one a schism of that of Tibet, the other Hindoo. The temples, by this account, are peculiarly elegant, seeming to resemble those of Ava or Siam. At Banga, a castle three miles distant from the city of Lelit Pattan, is a temple of surprising magnificence, the great court being paved with bluish marble, interspersed with large flowers of bronze. To the north of Catmandu is a hill called Simbi, upon which are some tombs of the Lamas of Tibet, with inscriptions *. By the Jesuit's account the kingdom of Nipal is ancient, and the language peculiar; but it has recently been injured by civil wars, fostered by the king of Gorca. To the west of Nipal are not less than twenty-four petty kingdoms, one of which is Lamgi; another to the south is called Tirhut. The king of Gorca has recently effected the conquest of Nipal, and of the Ciratas to the east; and other kingdoms as far as the borders of Coch Bihar. Amidst these multifarious names, there is not one known to the Lamas; and it appears that the wide regions of Tibet, and its dependencies, may be pronounced, in this the beginning of the nineteenth century, to be almost utterly unknown †.

To the west of Nipal the states of Gorca, and Kemaoon on the Gogra, are arranged on the frontiers of Gangetic Hindostan. Of these countries little is known: but it is to be hoped that the Asiatic Society will send scientific men to examine them, with the remainder of Tibet and western Tatary. This attempt would merit the highest applause; and the jealousy of the Chinese might perhaps subside upon being informed of the merely scientific nature of the design, or be illuded by disguise, or pretensions to

* Dr. Buchanan has been so obliging as to communicate to me his MS. account of Nipal, drawn up during his residence in that country in 1802. It abounds with important information, particularly concerning the various Hindu sects, and the state of agriculture. Nipal is an immense plain, which separates the large mountainous tracts called BINDACHUL from the still more extensive alpine region called HEMACHUL or HEMALICHUL. Hence it appears that the chain, which immediately bounds Hindostan on the north, is called BINDA or VINDA: while the superior grand chain is that of HIMALA. In Nipal there is a productive copper mine; and the mountains which surround the province are chiefly of grey granite. Rock crystal, which, is found in the snowy mountains, is called *belor*, whence, perhaps, the name of Belur Tag. The Saligrams, or holy stones, are ammonites inclosed in black schistus. The goitre or swelled throat is not uncommon in Nipal. The people are very black, though surrounded with mountains covered with perpetual snow, whence it is argued that climate alone cannot occasion this variety. Sheep with four horns seem to be the common beasts of burthen in the mountains of Tibet. The best fruits in Nipal are the oranges and *pine apples*; and there is a singular mixture of the European and Asiatic trees and plants. Catmandu, the residence of the court, is neatly built, the houses being often of three floors. There is a guard of females, armed with swords, who attend the princess on horseback, riding astride like men. They are chosen for their beauty, and their licentiousness is equal to their charms. Tibet is here called Bhotea: and the river Gunduky rises far higher in the country than represented in our maps.

† The missionaries were confined to particular districts, but the curious reader may consult the materials of Cassiano in the *Alphabetum Tibetanum* of Giorgi, and the Let. Edif. tome 15, with Astley's Collection, vol. 4. and Phil. Trans. 68. See Rennell, 307. Du Halde, iv. 571, gives a slight account of his map of the country.

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the Hindoo faith, for a Bramin might travel in any direction. In the whole circle of geography there does not remain a range of discovery so curious and important. The centre of Africa can present little of general interest; while that of Asia may be regarded as the cradle of nations which have been diffused over our whole hemisphere.

Of Sirinagur, laid down in the maps as the most northern frontier country, an interesting account has recently appeared [12]. The mountains between Hurdwar and the higher region are often of argillaceous marl, though the rivulets roll down masses of opake quartz and granite. Forests abound: and many curious vegetables delight the eye of the botanist, To the north is seen the lofty chain of snowy mountains, passing in an extensive line from east to west. This range, instead of being about fifteen miles, as supposed, to the N. of the town of Sirinagur, is said by our traveller to be not less than eighty English miles. One of the most conspicuous summits is that of Hem, rising in four or five conical peaks; and near its base is a place of Hindoo worship called Budrinaut. Upon approaching the town, the rocks were a coarse dull granite, with beds of argillaceous schistus. Several rivulets descend into the Aliknundra, here acknowledged by the Hindoos as the genuine and divine Ganges. The Raja is of the Hindoo faith; but the country, a mass of mountains, extremely poor. The channel of the river is here not less than two hundred and fifty yards in breadth; which if the Bagharíti exceed, it must be a noble stream *. The sands are washed for gold; and about forty miles to the north of the town are two copper mines, with one of lead about fifty miles to the east. The natives follow the Hindoo faith; and Mr. Hardwick has published a curious list of the Rajas, in which the reigns are put ridiculously long; but as they are in number sixty-one, they cannot well ascend much above six hundred years. It is to be regretted that he did not proceed to the source of the Ganges, computed to be fourteen days distant, probably not above a hundred and forty miles, through a rocky and difficult country. From the information of the natives, the course is E. and W. for about three days from Sirinagur; then N. E. and S. W., receiving many mountain streams, and at Bissenprag, a river from the E. as large as itself, called Dood Ganga, or the Milk river. Bissenprag is near the base of a mountain, on which stands the famous temple of Buddrinaut. All these circumstances unite with the worship and temples of the Hindoos to evince that this river is the genuine Ganges: but the most recent maps of this part of Tibet seem very defective in positions; and it would appear, among others, that Cashmir is far more near to Sirinagur than is commonly supposed.

[12] As. Res. vi. 309.

* Rennell, 370, allows that the Aliknundra is the larger stream; yet he unaccountably supposes the other to be the true Ganges, in opposition to the Hindoos and Bramins themselves upon the spot.

CHAP-

CHAPTER III.

SINDETIC HINDOSTAN; OR THE COUNTRIES ON THE RIVER SINDEH OR INDUS.

Extent.—Western Boundary of Hindostan.—Chief Cities and Towns.

EXTENT.] THIS part extends from the northern mountains of Cashmir, and the Hindoo Koh, in the north of Cabul, to the mouth of the Indus, a length of about nine hundred B. miles, and about three hundred and fifty in medial breadth. Besides part of the provinces of Delhi and Agimer, it contains the extensive province of Moultan, with Lahore, Cashmir, Cabul, the frontier region of Candahar, and that of Sindi at the mouth of the Indus. These provinces being the most remote from the seat of British power, and the greater part of modern travellers having visited Hindostan by sea, they are less accurately known than any other quarter.

WESTERN BOUNDARY.] The chief cities which occur in this extensive region are Lahore, Cashmir, Cabul, Ghizni or Gasna, Candahar, Moultan, and Tatta in the Sindean Delta. On the east of the Indus, or in Panjab, the Seiks, a new religious sect, form the leading power; while on the west, and even as far as Cashmir, the dominions of a Persian Shah, whose seat of empire is at Candahar, comprise all the provinces, with several in the east of Persia, and to him even Sindi is tributary. Yet by many geographers the river Indus is esteemed as the boundary between Persia and Hindostan, in which view the Persian Shah * possesses little in proper Hindostan, except the country of Cashmir. But D'Anville, in his large map of the world as known to the ancients, has justly arranged in ancient India some countries to the west of the Indus, including not only all the streams that join that river from the west, but even the river Tomerus, corresponding with the Haur of modern maps, which seems infallibly to have belonged to the Persian province of Gedrosia. Pliny considers the Indus as the extreme western boundary of India [1]; which from Strabo appears to have been the received opinion, from the age of Alexander to his own time. Arrian also describes the river Indus as the western boundary of this country, but including the Delta, and on the N. W. bounded by the Hindoo Koh, so that even the Kameh and Comul were Indian streams, being the Gurcus and Cophenes of antiquity, the last specially mentioned by the accurate Arrian as Indian. Hence it is evident that when Major Rennell regards the Sindeh as the western boundary of Hindostan, he has not expressed the opinion either of ancient or modern geographers; the Hindoo Koh, or Indian Caucasus of the ancients, being the N. W. boundary; and even towards the south, where the limits of Persia do not seem to have been accurately defined, Ptolemy indicates a considerable space on the W. of the river as included in India, an opinion adopted by D'Anville, not only in his ancient geography, but in his modern map of Asia; in which indeed, by a mistake in the chain of the mountains, he has included the city of Candahar in Persia, but seems on the other hand too far to have extended

* Or ratker Afghan, of the sect of Duvani Saduzei.

[1] vi. 17.

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the limits on the south, when he has included even the town of Guadal in Hindostan *. As Major Rennell justly considers the city of Candahar as the gate of Hindostan towards Persia, while Cabul stands in the same view towards Tatary, it is evident that the Sindeh cannot be considered as a boundary [2]. The southern limit between Sindi and Mekran he does not define; but it may be regarded as extending to the river Araba, the Arabius of Ptolemy. The cause of this uncertainty in the S. E. of Persia is that the country is wild and desert, and has in all ages been thinly inhabited, having been so much neglected that it is chiefly possessed by Arabian fishers from the opposite shores.

This discussion became necessary to illustrate the provinces and boundaries of Sindetic Hindostan; and it will hence appear that when either ancient or modern geographers speak of the Indus as a western boundary, the expression is only to be taken in a loose sense, as when they speak of India beyond the Ganges, in which they include the Burrampooter, and several streams to the east of that majestic river.

This brief account of Sindetic Hindostan shall begin with the N. E. and end with the S. W., after mentioning that Agimer, which may be regarded as the most eastern city of this division, is little remarkable, except for a strong fortress on a hill.

Chief Cities and Towns.] The town of Sirhind is placed by modern maps on the river Caggar, which D'Anville bends west into the Indus, but Major Rennell supposes it to follow a detached course into the gulph of Cutch: perhaps it may be lost in the great sandy desert.

Lahore, now the capital of the Seiks, was the residence of the first Mahometan conquerors, before they advanced to the more central parts; and including the suburbs, was supposed to be three leagues in length. From Lahore to Agra, near 500 English miles, there was an avenue of shady trees [3]. The river Rauvee passes by Lahore, being the Reva of the Hindoos, said by them to derive its source from the mountain Vindhia, as the Serjou from the Himar or Himala [4]. Wesdin adds that the Vindhia mountains occur in no map; but are in long. 94° from Ferro, and lat. 34°. He asserts that the Reva is the chief tributary stream of the Sindeh; but as he only visited the Deccan, his distant intelligence seems erroneous, nor are his other Indian rivers easily explained.

Almost due north from Lahore, at the supposed distance of about 200 B. miles, stands Cashmir, the capital of the delightful province so called. This city is said to be also called Sirinagur, having been confounded with the town of the same name, already mentioned in the account of Gangetic Hindostan. To avoid the confusion arising from identity of names, it is better to follow the authorities of Bernier and Forster, who denominate the capital of Cashmir by the same term as the country. "The city, which in the ancient annals of India was known by the name of Siringnaghur, but now by that of the province at large, extends about three miles on each side of the river Jalum, over which are four or five wooden bridges, and occupies, in some part of its breadth, which is irregular, about two miles. The houses, many of them two and three stories high, are slightly built of brick and mortar, with a large intermixture of timber. On a standing roof of wood is laid a covering of fine earth, which shelters the building from the great quantity of snow that falls in the winter season. This fence communicates an equal warmth in winter as a refreshing coolness in the summer season, when the tops of the houses, which are planted with a variety

* Chardin, and several other travellers in Persia, consider the Indus as its western boundary; but the idea is vague and objectionable. Dr. Vincent, an able enquirer into the voyage of Nearchus, observes, page 198, that the Arabitæ and Oritæ, on the west of the Indus, were Indian tribes.

[2] 153. 167. compared with page xix.

[3] Renell, 82; but others only extend it to Delhi.

[4] Wesdin, 232.

of

of flowers, exhibit at a distance the spacious view of a beautifully checquered parterre. The streets are narrow, and choked with the filth of the inhabitants, who are proverbially unclean. No buildings are seen in this city worthy of remark; though the Kasmirians boast much of a wooden mosque called the Juma Mussid, erected by one of the emperors of Hindostan; but its claim to distinction is very moderate [5]." For a particular account of the country of Cashmir the reader is referred to the same traveller, who informs us that this delicious vale extends in an oval form, about 90 miles from S. E. to N. W. It was subject to the Zagathai princes (a Tataric race, who speak the same language with the Turks) till A.D. 1586, when it became subject to the Monguls, and afterwards to the Afgans. Rice is the common product of the plains: while the surrounding hills yield wheat, barley, and other crops. The celebrated shawls are only manufactured here: the material being from Tibet, especially those districts which lie at a month's journey to the north-east *. The price at the loom is from 20s. to 5l.: and the revenue is transmitted to the Afgan capital in this fabric. The Cashmirians are stout and well formed, but their features often coarse and broad, even those of the women, who in this northern part of India are of a deeper brown complexion than thofe of southern France or Spain. The dress is inelegant; but the people gay and lively, and fond of parties of pleasure on their delicious lake. The Afgan government has however somewhat crushed their spirit. The language is derived from the Sanscret, but the Persian is chiefly used in elegant composition. During the summer heats, the Great Moguls used to retire to Cashmir, where they enjoyed a cool and refreshing climate.

The wide space from Cashmir to Cabul is more remarkable for numerous streams and mountains than any other circumstance; and the conquerors of India preferred the south. Even in Cabul the mountains are said to be covered with perpetual snow; but the country is diversified with gentle hills, fertile vales, and stately forests. It is also intersected by many streams; and besides delicate fruits and flowers, is abundant in other productions. Ghizni was the ancient capital of the country, of which Candahar was then reckoned a part [6]. The city of Cabul is the capital of the dominions of the Persian Shah, usually styled king of Candahar, whose dominions extend westward beyond the sea of Durrah, including a great part of Corasan, with the large Persian province of Segistan, being about 800 B. miles in length by about half that breadth. Cabul is esteemed a considerable city, in a romantic and healthy situation.

Ghizni or Gasna is remarkable as the seat of the first Mahometan conquerors of Hindostan, whose empire almost corresponds with the modern kingdom of Candahar.

The city which gives name to this last is of small account, except as a noted pass from Persia into Hindostan.

Having thus reached the most western frontier, and nothing further worthy of commemoration arising on that side of the Sindeh, it will be proper to pursue the course of that grand stream towards the south. The small city and fortress of Attock were only built by Acbar, 1581; but the vicinity was memorable in ancient times as the general passage from India to the west. Mr. Forster crossed the Indus about twenty miles above Attock, and found it a rough rapid stream, about a mile in breadth, where it was not interrupted by isles. This size indicates a remote source, and many tributary streams. The water was extremely cold in July, and discoloured with fine black sand †.

[5] Forster, vol. ii.

* Forster's Travels, ii. 18.: if this intelligence be genuine, it evinces very gross errors in modern maps, which suppose the northern boundaries of Tibet to be the same with those of Cashmir. The N. mountains of Tibet would thus give source to the rivers of Little Bucharia.

[6] Rennell, 152.

† D'Anville places Ashnagur on the Indus about 80 B. miles above Attock. This place, noted in Hindoo history (Wesdin, 36.), is omitted by Rennell, whose map of Hindostan is in the N. W. singularly restricted.

Moultan, the capital of the province so called, is about 170 B. miles to the south of Attock, on the large river Chunab, not far from its junction with the Indus, along which there is an uninterrupted navigation for vessels of 200 tons, not only to this city but as far as Lahore [7]. Moultan is a small city, and of little consequence, except for its antiquity and cotton manufacture.

The last remarkable city on the Indus is Tatta, the capital of the province of Sindi, and situated within the Delta, the upper part of which is well cultivated, while the lower, instead of the lofty forests of the Gangetic Sunderbunds, presents only low brushwood, swamps, and lakes. In the months of July, August, and September, when the S. W. monsoon brings rain in most parts of India, the atmosphere is here often clouded, but no rain falls except near the sea. At Tatta the heats are so violent, and the winds from the sandy deserts on the E. and N. W. so pernicious, that many precautions are used. The manufactures of this city in silk wool from Kerman, and cotton, have greatly declined. The Mahometan prince of Sindi is tributary to Candahar.

[7] Rennell, 178: yet, page 93, he mentions the river of Moultan as being choked up about 1665.

CHAPTER IV.

CENTRAL HINDOSTAN, OR THE MIDDLE PROVINCES.

Boundaries. — Chief Cities. — Sircars. — Ancient Trade. — Pirates.

Boundaries.] THIS division is chiefly bounded by Gangetic Hindostan on the north; and on the west by the sandy desert, and the ocean. The southern limit is the river Kisna, with its tributary stream the Beema; while the east is washed by the bay of Bengal. The length E. to W. from Jigat Point to Cape Palmiras is little less than 1200 B. miles; while the medial breadth is about 400. In it are comprehended the province of Orissa, with part of Golconda, Berar, Dowlatabad, Candeish, and Guzerat, and other districts of inferior name; and on the eastern shore are the British provinces of the Sircars.

Chief Cities.] In a natural transition from the division of India last described, the province of Guzerat first presents itself, like a large promontory; but the shores seem little adapted to commercial purposes. The chief city, Amedabad, is considerable, and well fortified; it was taken by the English under General Goddard in 1780, and restored to the Marattas in 1783. Cambay, at the distance of more than fifty miles, may be called the sea port of this capital; itself a handsome city, formerly of great trade in spice, ivory, silk, and cotton cloths; but the harbour was impeded with sand and mud, and is now little frequented, the trade being chiefly transferred to Surat. The sovereigns of Guzerat were not a little powerful, and long withstood the power of the Monguls: and towards the east of this province appears to have been the seat of the great Balhara, or Hindoo emperor of the Arabian authors, whose capital was Nahalwanah, or Nehalwarah, lat. 22°: but the oriental longitudes, or indeed the numerals in general, in their geographical works, are of noted inaccuracy *. Renaudot has however erred grossly when he confounds the Balhara of central Hindostan with the Zamorin, or Samoory, the king of an extensive territory around Calicut, whose name and diminished splendour exist to this day. Edrisi, in the twelfth century, mentions that the people here were worshippers of Boodh, the connection with the south of Hindostan being more intimate than that with the north; to which last the worship of Brahma, and the sect of the Bramins, appear to have been restricted at a late epoch. But the Arabian authors are certainly fabulous, when they suppose that the power of the Balhara extended even to China, when it probably only comprised the central parts of Hindostan: yet their opinion of his power is indicated, as the fourth grand sovereign in the world, with the emperors of China and Greece, and the Arabian chalifs.

Surat was formerly more celebrated as the port whence the Mahometans of India embarked on their pilgrimage to Mecca, than for any other circumstance, though reported to have been an important city in ancient times. The Portuguese seized Surat soon after their arrival in Hindostan; and it was among the first places in this country

* The ancient Nerhwalah is now Puttan, N. of Amenadab, and was formerly the capital of Guzerat. Rennell, xlvi. 228. See a list of the kings in Bernoulli, i. 413, where the race of Bagela are perhaps the Balharas of the Arabs.

frequented by the English, of whose factory here a view may be found in Mandelslo's Travels, who describes the harbour as small and incommodious; yet it was the only one on the western coast in which ships could be secure during the monsoon rains from May to September *.

Bombay, at a considerable distance to the south, is a well known English settlement on a small island, about seven miles in length, containing a very strong capacious fortress, a large city, a dock yard, a marine arsenal [1]. It was ceded to the English in 1662 by the Portuguese, as part of the dower of the queen of Charles II. In the same sound or small bay, are the isles of Salset, and Elephanta, in which are subterranean temples, which, as well as the grand monuments at Ellora, a considerable distance inland, are probably foundations of the great Balharas in the tenth or eleventh century; for the subjects are now known to belong to the common Hindoo system, and might thus have been works of the most recent erection.

On leaving the shore, and proceeding towards the east of central Hindostan, first occurs the city of Burhampour, of small note. Ellichpour is of considerable importance, being the chief city of Berar. Nagpour is the capital of the eastern division of the Maratta empire, as Poona is of the western, being a modern city of small size. At Nagpour, which may be called the central city of Hindostan, the rainy season commences with the S. W. monsoon.

Sircars.] Not far to the east of this city begins that extensive and unexplored wilderness, which is pervaded by the great river Bain or Baun Gonga, and terminates in the mountains bounding the English Sircars †. The acquisition of these provinces has been already mentioned in the first chapter. They present little memorable; for the famous temple of Jagernaut, which in reputation succeeded that of Sumnaut in Guzerat, destroyed by Mahmud of Ghizni in the eleventh century, stands to the north of the Chilka lake. Nor does there appear to be any capital city, or chief town, in the Delta of the Godaveri, or throughout the Sircars, the wide track of forest on the N. W. having prohibited inland trade or intercourse. Masulipatam is indeed a place of some account; but standing on the northern branch of the Kistna, may be arranged in the southern division of Hindostan.

On turning towards the west few places of note arise, except Aurungabad, a modern city, deriving its name from Aurungzeb, in whose time it was the capital of the Deccan, or parts to the south of Hindostan proper. It was afterwards the metropolis of the

* For a recent account of Surat, see Stavorinus, vol. ii. p. 479. The inhabitants are said to be 500,000, a considerable part of whom are *Moors*, that is Arabs, Persians, Monguls, Turks, professing Mahometanism; but retaining some pagan rites, as the *salamma*, or salutation to the moon, &c.

[1] Rennell, 31: the name is Portuguese *Buon bahia*, a good bay.

† See Mr. Blunt's Journey, above quoted, for minute details concerning this formerly obscure region. Asiat. Res. ii. 128—200. This important journey appears to have been undertaken solely with geographical views; and it is said that the East India Company entertain the highly laudable intention of publishing an entirely new map of Hindostan. The hitherto unexplored region appears to consist almost entirely of high rocky mountains and forests, thinly inhabited by the Goands, a naked, savage, and ferocious race, who extend even to the north of Corair; which last province abounds in game and many kinds of deer, with wild buffaloes, black bears, leopards, and particularly the royal tiger, the latter common in the sylvan regions to the S., where they depopulate whole villages. Omercuntuc, which gives source to three rivers, the Nerbudda, the Soan, and the Jobala, (see Rochette's map,) is a high table land; the rocks of red granite, and the soil of red clay. To the S. a great range of mountains proceeds between the Baun Gonga and Mahanada, giving source to streams that flow E. and W. into these rivers. This ridge passes from Omercuntuc through Zelingana and Bustar, to those of the northern Sircars.

The Baun Gonga is also called the Waini, and rises in the mountains of Choteesgur. The river Inderowti is likewise considerable. The journey was not accomplished in all its objects; but has nevertheless greatly served geography, and is accompanied with a journal of the route and bearings, and several astronomical observations.

Nizam's territory, till the preference was given to Hydrabad. Near this city is Dowlatabad, which gives name to the province, with a singular fortress on a peaked rock [2].

ANCIENT TRADE.] This central part of Hindostan nearly corresponds with the Deccan, or southern countries of the Monguls, who did not pass the Kisna till a recent period; and instead of using the term in its just acceptation, applied it to the southern provinces of their empire. Though formerly the seat of great power, and the western coasts greatly frequented by foreign merchants of all nations, the harbours have since been impeded, and the commerce has declined, being now chiefly transferred to the Ganges, which presents such superior advantages as amply compensate for the greater distance of the voyage. The Roman and Arabian fame of the western shores has vanished; and silence prevails in the streets of Barygaza or Baroach, the port of the great inland city Tagara, whence the products of India, gems, ivory, myrrh, pepper, ginger, and cotton cloths, plain or ornamented with flowers, were in the time of Arrian exported to the western world.

In later times the southern part of this coast was remarkable upon another account, being the chosen residence of daring pirates. Yet these freebooters were known even to Pliny and Ptolemy, being stimulated in all ages by the richness of the commerce. They resembled on a small scale the piratical states of Barbary, and a succession of *Angrias*, was continued till 1756, when we seized Gheriah, the principal fortress.

[2] See the print, Bernoulli, i. 480.

CHAPTER V.

THE SOUTHERN DIVISION OF HINDOSTAN.

Boundaries.—British Possessions.—Chief Cities and Towns.

BOUNDARIES.] THIS part, which may also be called the Deccan or South, in the most proper acceptation of the term*, is bounded, as already explained, by the river Kistna, and its most northern subsidiary streams flowing into the Beema. Hence it will extend from the latitude of Bombay to the southern point of Cape Comorin, about 830 B. miles in length, and about 350 of medial breadth. It contains nearly the whole of the province of Visiapour, and the most important part of that of Golconda, with the central kingdom of Mysore, the long eastern province of Carnada, or the Carnatic, the principalities of Tanjore, Travancore, and the Samorins of Calicut, the pepper coast of Canara, and other districts, of which Concam is supposed to be the Kamkam, which the Arabian authors mention as adjoining to the territory of Balharra. In this division of Hindostan may also be included the island of Ceylon, the coasts of which are now possessed by the English, who have supplanted the Dutch; while the native princes retain the extensive inland parts.

BRITISH POSSESSIONS.] In addition to the district around Madras, the British power was, in 1792 and 1799, extended over wide provinces in the south and west of Mysore, and Seringapatam the capital is also in our possession, so that our territories in this portion of Hindostan only yield in extent and consequence to those on the Ganges. Seringapatam is not only detached, but is by its inland situation little adapted for a commercial capital; it may therefore be perhaps expected that Calicut, an ancient and celebrated emporium, or some other place on that coast, will be selected as a metropolitan town of the new acquisitions.

CHIEF CITIES AND TOWNS.] In recent times Seringapatam may be regarded as the most important city in this portion of Hindostan. It is situated in an isle, surrounded by the river Caveri, which is even here about five feet deep, and runs over a rocky channel. The length of this isle is about four miles, and the breadth about a mile and a half; the western side being allotted to the fortress, distinguished by regular outworks, magnificent palaces, and lofty mosks; for Tippoo and his father were Mahometans, not averse to the prosecution of the Hindoos and Christians[1]. The environs were decorated with noble gardens; and among other means of defence was what is called the *bound hedge*, consisting of every thorny tree or caustic plant of the climate, planted to the breadth of from thirty to fifty feet. When the strength of the fortifications of all kinds, and the number of Tippoo's troops and artillery, are considered, our repeated successes must afford a convincing proof that no climate can overcome British courage, conduct, and perseverance.

* It was also called in general Carnada, or the Carnatic, (Rennell's last Memoir, page 20;) and was mostly subject to one king or raja, whose capital was Bijanagur, on the south bank of the river Toombudra, said to have been founded by Belaldea, A. D. 1344, being thus placed to guard the northern frontier of his empire. The ruins are extensive, several rugged hills and rocks being covered with temples still beautiful; the circumference appears to be about eight miles. (Ib. 40.) The empire of Bijanagur seems to have continued about eight hundred years.

[1] Pennant's View of Hindostan, vol. ii. p. 82.

In this central territory we also possess several considerable towns, Salem and Attore in the east; Dindigul, Coimbetore, Palicaud, on the south; and on the western coast Paniany, Ferokabad, Calicut, now nearly deserted, Tellicherri, Mangalore; and our northern possession of Carwar is within forty miles of the Portuguese settlement of Goa; while on the south we approach within a like distance of Cochin. Of these places Calicut is memorable as the first Indian port visited by the Portuguese under Vasco de Gama, and as the seat of the Zamorins, who at that period appear to have possessed the whole Malabar coast from Goa to Cochin; and perhaps by the interruption of the Gauts or mountains of Sukhien, at Palicaud, where the only river of consequence falls to the west, their power might extend inland; but at any rate it seems to have then rivalled any sovereignty on the south of the Kistna.

The native rajas of Mysore, a part of whose dominions we have also shared, were princes of some eminence supplanted by the Mahometan usurpation of Hyder. In the Carnatic we have long held Madras, where our ancestors settled about 1640; but the fortress, which is strong, and includes a regular well built city, is of modern date. Unhappily there is no port, nor is there indeed one haven for large vessels, from the mouth of the Ganges to Trincomali on the eastern side of Ceylon, which renders this last of singular benefit to our commerce. Through this wide extent of fifteen degrees, or more than 1000 B. miles, the coast forms nearly an uniform line, infested with a dangerous surf, and scarcely accessible, except in the flat-bottomed boats of the country called Masula boats. But, if found necessary, European industry might certainly form a port at the wide but impeded mouths of the Godaveri, the Kistna, or the Caveri; and when our colonies shall have assumed a permanent and steady progress of population, it is probable that such designs may be executed.

Not far from the western frontier of our settlement at Madras stands Arcot, esteemed the capital of Carnada, or the Carnatic. The Navab* often resides at Madras. In his dominions there are several celebrated temples, visited by numerous pilgrims; and in general the southern parts of Hindostan display more numerous edifices and other marks of civilization, than the northern. Yet the successive settlements of the Arabs, and latterly of many European nations, seem to indicate an inferiority of intellect and power in the natives. For neither in China, nor exterior India, have such foreign conquests been atchieved; and in this respect the Hindoos seem rather to approach the rude tribes of Africa and America, or at most the slight civilization of Mexico or Peru, than the union, spirit, and discipline to be found in states truly civilized.

Having thus briefly mentioned the British possessions in this quarter of Hindostan, and their nearest ally, it may be proper to indicate a few other remarkable places to the south of these possessions. Tranquebar is a noted Danish settlement in the kingdom of Tanjore, which embraces the wide Delta of the Caveri. This settlement was formed about 1617, and has been chiefly remarkable on account of the Lutheran missionaries, who resorted hither to convert the Hindoos, and have sometimes contributed to illustrate natural history. Pondicheri was the principal settlement of the French, founded in 1674, and before the war, 1756, was a large and beautiful city.

On the western coast, or that of Malabar, stands Cochin, on the northern point of a long tract of land, forming a kind of island, surrounded on the east by a creek of the sea, which receives several streams. But this seemingly ample harbour is obstructed by a dangerous bar. When the Portuguese first visited Hindostan, Cochin and the surrounding territory were possessed by a native raja; and the celebrated Vasco de Gama died here 1525. This city remained subject to the Portuguese till

* This word, also written *Nabob*, implies lieutenant-governor, or viceroy; but the title became hereditary.

1660, when it was taken by the Dutch, who seem still to be permitted to retain this settlement, or perhaps have resigned it to the French. The surrounding creeks and marshes of this low and unhealthy shore abound with fish and game[2].

To the north of the British territories first occurs Goa, formerly a capital settlement of the Portuguese, and a noted seat of their Inquisition. This city, once magnificent, stands on a small isle, in the midst of a beautiful bay, which receives a rivulet called the Gonga, and two or three others from the Balagauts or highest mountains of Sukhien, which form a grand distant prospect, while the intervening scene is variegated with hills, woods, convents, and villas. It was seized by the celebrated Albuquerque, the greatest of the Portuguese commanders in India, A. D. 1510. It afterwards became another Malacca, another centre of Portuguese trade[3]. The harbour is ranked among the first in India, and if in the hands of the English would probably resume its former consequence.

The other parts of the coast presenting few remarkable objects it will be proper to pass the mountainous ridge, and first visit Poona, the capital of the western empire of the Marattas, but a mean defenceless city; the archives of the government, and in all appearance the chief seat of power, being at Poorunder, a fortress about eighteen miles to the south-east.

Visiapour, in the Maratta territory, also called Bejapour, is a considerable city, and was once the capital of a large kingdom of the same name. In the vicinity are celebrated diamond mines.

Hydrabad is the metropolis of the Nizam's territory, and particularly of the celebrated kingdom or province of Golconda, but seems otherwise little remarkable. Betwixt these two last-named cities stands Calberga, formerly the capital of a powerful kingdom, that of the Deccan, under the Bamineah dynasty, as already mentioned in the general view of Hindostan. On passing the Kistna, few places of distinguished note occur. The regions on the great river Toombuddra, which rises nearly in the parallel of Seringapatam, and pursues a northern course of about 350 B. miles till it joins the Kistna after passing Canoul, have been delineated with superior accuracy in Rennell's last map, April 1800; and it is to be wished that he would publish a general map of Hindostan on a larger scale than that of 1788, with all the most recent discoveries.

[2] Wesdin, 130, gives a good account of Cochin.

[3] Pennant, i. 112.

CHAP-

ISLAND OF CEYLON.

Extent and Name.—Religion.—Population.—Manners and Customs.—Towns.—Manufactures.—Climate.—Rivers.—Mountains.—Forests.—Zoology.—Mineralogy.—Pearl Fishery.—Other Isles.

EXTENT AND NAME.] THOUGH this island be not above a fifth part of the size ascribed to it by the strange exaggeration of the ancients, it still approaches to that of Ireland, being generally supposed to be about 260 British miles in length by about 150 in breadth; but in the wide continent of Asia territory is on so large a scale, that what in Europe would constitute a kingdom is here scarcely a province. This isle is the Taprobana, Salice, and Sieledeba of the ancients, the Serendib of the Arabians: in the Hindoo language it is called Lanca; and the people are doubtless of Hindoo origin. Its history is little known. The Hindoos fable that it was conquered by the almighty Rama, who constructed a bridge over the shoals and islands, still called by his name; but the Mahometans style it Adam's Bridge; as, by another absurd alteration, they have called the supposed print of the foot of the god Boodh, on a high mountain, by the name of Adam's Foot. In the reign of Claudius embassadors were sent to Rome by a Singalese rajia, raja, or king, whom Pliny, mistaking his title for his name, has called Rachia [1]. In the trifling treatise on the Brahmans, written by one Palladius, and translated by St. Ambrose, we are told that four kings reigned in Taprobana, of whom one was styled Maharagia, or the great king. The succession and petty wars of these princes would be little important. When the Portuguese seized this island, 1506, the chief monarch was the king of Cotta; but the central province of Candea, or Kandi, afterwards appears as the leading principality. The Portuguese retained possession of the shores, (the inland parts rising to a high table land, bounded by forests, and difficult passes,) till about 1660, when they were expelled by the Dutch, between whom and the king of Kandi a war arose 1759, which terminated 1766, by the submission of the latter, who surrendered all the coasts, and agreed to deliver yearly a quantity of cinnamon at a low rate [2]. From the sordid domination of the Dutch it has recently passed under the more liberal banner of British power; and it is to be hoped that our ingenious countrymen will furnish us with more precise accounts of the formerly Dutch possessions in general, which mercantile jealousy concealed in profound obscurity.

RELIGION.] The religion of Ceylon is the ancient worship of Boodh, whose images appear with short and crisped hair, because it is fabled that he cut it with a golden sword, which produced that effect [3]. In the Asiatic Researches may be found prints of some antiquities and idols, discovered on the southern and western coasts of Ceylon, among which the image of Boodh is predominant; and an old king called Coutta Raja is sculptured in granite, and celebrated in the Singalese traditions. The worship of Boodh is supposed to have originated in Ceylon; and thence to have spread to ancient Hindostan, to exterior India, Tibet, and even to China and Japan. Such are the traditions

[1] Pliny, vi. 22. [2] Wesdin, 429. [3] As. Res. vi. 453.

ditions in Siam, Pegu, &c. which suppose that Boodh, probably a kind of Confucius or deified philosopher, flourished about 540 years before the Christian æra; and as the Boodhis in general shew a prodigious superiority of good sense to the visionary Bramins, their accounts deserve more credit than the idle dreams and millionary chronology of the Pundits. Others, however, suppose that the worship of Boodh originated in exterior India*. However this be, there seems no ground to infer that the puerile mythology of the Hindoos was derived from Egypt, though the similarity of the countries in respect to annual inundations, and several natural products, occasioned a faint resemblance in some respects, merely because human fears and wishes are the same in similar situations. The great number and variety of heads and arms of the Hindoo idols seem unrivalled by the more sober Egyptians, who had very different modes of expressing power, or beauty: and reason will find more cause to discriminate, than fancy to assimilate, the two systems.

Population.] There does not yet appear to be any authentic intelligence concerning the population of Ceylon; but as it seems to remain almost in a state of nature the inhabitants cannot be inferred to be numerous. The hundreds of cities mentioned by ancient writers are now esteemed completely fabulous; nor does there seem to be one place deserving the name of a city, mentioned either in ancient or modern record. This island is only important in a commercial view, from its celebrated products of cinnamon and gems. The harbour of Trincomali, on the east, is to us of great consequence, because there is none on the eastern coast of Hindostan: and it has even been suggested that in case any revolution, to which all human affairs are subject, should expel us from the continent of Hindostan, this island might afford an extensive and grand asylum, where the British name and commerce might be perpetuated.

Manners and Customs.] The natives of Ceylon, called Singalese, either from a native or Portuguese term, are not so black as those of Malabar, and have few manners and customs distinct from other Hindoos. It is said that several brothers may have one wife in common, as in Tibet; but the polygamy of males is also allowed [4]. In general chastity is little esteemed in the oriental countries; and the morality of many nations is so lax in this respect that the intercourse of the sexes is considered as far more indifferent than the use of certain foods. The language is rather peculiar; but some of the natives understand both the Tamulic and that of Malabar.

Towns.] The native town Kandi, in the centre of the isle, seems to be of small size and consequence, and probably only distinguished by a palisade and a few temples [5]. It

* There are three chief distinctions between the priests of Boodh and the Bramins: the former may lay down the priesthood; they eat flesh, but will not kill the animal; and they form no cast nor tribe, but are from the mass of the people.

[4] Wesdin, 435.

[5] Mandelslo, 279, who gives a list of the other towns. For an imperfect account of Kandi, see Percival's Ceylon, 1805, 4to. But see Cordiner's curious account of this country, a recent and valuable publication.

"The country round the city of Candy is described as being the most beautiful and fertile in nature; mountains cultivated to their summits, interspersed with villages, rivulets, and cattle; fruitful vallies with groves of areka jacca, cocoa-nuts, limes, oranges, plaintain, and pumplemose trees; with fine villages and fields of paddy and other grain, the latter well watered by streams from the mountains; the whole combining to form a scene singularly picturesque.

"The palace is an immense pile of building. The town about two miles in length, consisting only of one broad street, terminated by the palace; there are lesser streets branching from it, but of no great length. The houses are mostly of mud, and raised on steps about five feet above the level of the earth. The palace is built of a kind of cheenam, or cement, perfectly white, with stone gateways: it is a square of immense extent, one fourth of which is not yet completed. In the centre is a small square inclosure, forming the cemetery of the kings of Candy. The palace contains a great number of rooms, the walls of which present a multitude of inscriptions, and are painted with the most grotesque figures Many of the walls

It was taken by the Portuguese in 1590; but no recent traveller appears to have visited this deep recess of sovereign power.

The chief town of the Portuguese, Dutch, and English possessions, is Colombo, a handsome place, and well fortified; the residence of the governor is elegant, but only consists of one floor with a balcony to receive the cool air [6]. Ceylon being exposed on all sides to the sea breezes the climate is not so hot as that of Hindostan; far less pestiferous, like the marshy exhalations of Batavia. At Colombo there is a printing press, where the Dutch published religious books in the Tamulic, Malabar, and Singalese languages. The name of Colombo seems indigenous, as well as that of Nigombo, a fortress a few miles to the N. of this capital.

The northern parts of Ceylon are chiefly left to the natives, but the town of Jafnapatam, or Jafna, was a Dutch settlement in a detached isle. The grand pearl fishery is conducted in the gulf of Manar, near Condatchey, a miserable place in a sandy district, to which water is brought from Aripoo, a village four miles to the south: the shoals near Rama's bridge supply inexhaustible stores of this valued production [7].

On pursuing the shore towards the east it is mostly guarded by sand-banks, or rocks; but the noble harbour of Trincomali opens at the mouth of the Mowil Ganga, the Ganges of Ptolemy's large map of Taprobana; and was defended by a strong fortress. Batacola is an inferior haven, on the same side of the island.

But the southern side of Ceylon has been chiefly visited, abounding with gems and other rich productions. Matura was a Dutch factory near the most southern promontory called Dondra, where excellent kinds of cinnamon were collected; and varieties of precious stones abound in the vicinity [8]. Not far to the W. of Matura is Gale, or Galle, near a point so called, a handsome town strongly fortified, on the projecting angle of a rock [9].

Manufactures.] There is little mention of any manufactures conducted in this island; but the natives seem not unskilled in the common works in gold and iron. The Dutch ships used to sail from Galle, laden with cinnamon, pepper, and other spices; nor must pearls and precious stones be forgotten among the articles of export. The colombo wood, a bitter in recent use, receives its name from the capital; but its native country or district seems still unknown.

Climate.] The climate and seasons correspond in some degree with the adjacent continent; yet the exposure on all sides to the sea renders the air more cool and salubrious. The general aspect of the country somewhat resembles that of southern Hindostan; a high table land, in the centre, being surrounded with low shores, about six or eight leagues in breadth. High mountains, prodigious forests, full of aromatic trees and plants, and many pleasant rivers and streams diversify this country, which by the Hindoos is esteemed a second paradise. The vales are of a rich fat soil; and, when cleared, amazingly fertile in rice, and other useful vegetables.

Rivers.] There are five considerable rivers described by Ptolemy; of which the chief is the Mowil Ganga, on which stood Maagramum, the capital in his time, and modern Kandi stands on the same stream, one of the royal palaces being on an isle in that river, where the monarch keeps a treasure of gems; and his officers, like those of exterior India, are decorated with slight chains of gold.

The Phasis of Ptolemy running N. is perhaps the stream which passes to the N.W.

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are covered with immense pier glasses. In one room is a gigantic brass figure of Buddha in a sitting posture, with two smaller ones at his feet. The river of Candy is a very noble one, swarming with fish, which the king never permitted to be disturbed." *Asiatic Register for* 1804, London, 1807, p. 13.

[6] Thunberg, iv. 175.

[7] As. Res. v. 397.

[8] Thunberg, iv. 195, 231.

[9] Ib. 194.

by Ackpol. His western stream of Soana is perhaps that which enters the sea in that direction, near the centre of the isle. The Azanus S.W. seems that near the point of Galle; while his Baracus E. is the Barokan.

Mountains.] The chain or chains of mountains run N. and S. the southern part being called Malea by the Greek geographer; a mere native term for a mountain, as Ganga for a river. The northern part is by Ptolemy called Galibe. These mountains seem granitic; and are peculiarly rich in precious stones imbedded in primitive quartz. What the Mahometans have termed Adam's Peak is esteemed the highest; and is in Sanscret called Salmala, Boodh being fabled to have ascended from it to heaven.

Forests.] The forests are numerous and large, the haunts of innumerable elephants, like the Gauts of southern Hindostan. An ample account of the botany of this island is given by the skilful Thunberg; one of the most peculiar and precious trees is that producing the best cinnamon, about the thickness of stout paper, of a brownish yellow, and a flavour inclining to sweetness.

Zoology.] The elephants of Ceylon are supposed only to yield in beauty to those of Siam, and chiefly frequent the southern part of the island. Buffaloes are also found in a wild state, while the tame are used in rural œconomy. The wild boars are numerous and extremely fierce; nor is the tiger unknown, but probably not equal in size to those of Bengal. Bears, chacals, and many tribes of deer and monkies, are also natives of Ceylon. The alligator, frequent in the Hindoo rivers, here sometimes reaches the length of eighteen feet. Among a vast variety of elegant birds, the peacock, that rich ornament of the Hindoo forests, swarms in this beautiful island. For more ample information the ingenious labours of Pennant may be consulted[10].

Mineralogy.] Ceylon, opulent in every department of natural history, presents many minerals of uncommon beauty. Not to mention iron, gold, plumbago, &c. Thunberg has given a list of the precious stones, among which are the genuine ruby, sapphire, and topaz; nor are garnets or even rock crystals neglected by the Singalese. The finest rock crystal is that of a violet colour, called amethyst, a trivial stone, but when extremely pure not a little valued from the singularity of the tint. The water sapphire is only a harder kind of the colourless crystal: the yellow and brown are the Scotish Cairngorm stones, here cut for buttons, for which purpose black schorl is also used on mourning apparel. The jacint is of a yellowish brown, somewhat resembling the cinnamon stone, but the last is sometimes of a bright orange. The tourmalins, or transparent schorls, are also numerous in Ceylon; but some are falsely so called, as the red and blue, which are quartz; the green are chrysolite; while the yellow and white, or what are called Muturese diamonds, are pale topazes. Thunberg informs us that the Hindo term Tourmalin is thus applied to stones of different descriptions; but he does not describe the genuine tourmalin of mineralogists, which in Ceylon is generally dark brown or yellowish, while those of other colours come from Brazil and Tyrol. The Peridot of the French, which is a bright green stone of rather a soft nature, is found in Arabia, Persia, and India; but it is asserted that Ceylon produces the genuine emerald, which is esteemed peculiar to Peru, while the emerald of the ancients is probably the peridot. That hard spar, called Corundon, used by the Singalese, in polishing their precious stones, is found in the Gauts near Cape Comorin. The cat's eye, a kind of girasol, seems peculiar to Ceylon, as the noble or genuine opal is to Hungary.

Pearl Fishery.] Nor must the pearl fishery be forgotten, which commonly begins on the N.W. shore, about the middle of February, and continues till about the middle of April, when the S.W. monsoon commences[11]. The village of Condatchey

[10] View of Hindostan, vol. i.

[11] As. Res. v. 394.

is then crowded with a mixture of thousands of people, of different colours, countries, casts, and occupations; with numerous tents, and huts, and bazars, or shops; while the sea presents many boats hastening to the banks, or returning with the expected riches. The divers are chiefly Christians, or Moslems, who descend from five to ten fathoms, and remain under water about two minutes, each bringing up about a hundred oysters in his net. The species is minutely described in the paper quoted, which seems to confute the opinion of M. De St. Fond that pearls are produced by the perforation of some insect. These precious pearls are on the contrary always formed like the coats of an onion, around a grain of sand, or some other extraneous particle, which serves as a nucleus, the animal covering it with glutinous matter to prevent disagreeable friction; and even those formed in the shell seem produced by similar exertion to cover some rough part, but these are darker and bluer than genuine pearls. The yellow or gold-coloured pearl is most esteemed by the natives; and some are of a bright red lustre: but the dull grey, or blackish are of no value.

OTHER ISLES.] There are no other isles of any consequence near the coasts of Hindostan. These called Lacadives and Maldives scarcely merit a particular description, in a work of this general nature, which ought only to embrace the most interesting topics; and the Andaman and Nicobar isles properly belong to exterior India, where a short account of them may be found, after the peninsula of Malacca, to which coast they are the most approximated. It may here suffice to observe that in the Hindoo language *dive* implies an isle; and Ptolemy computes those which mariners saw before they reached Ceylon, that is the Maldives, at more than thirteen hundred. They form as it were an oblong inclosure of small low regular isles, around a clear space of sea, with very shallow water between each. They are governed by a chief called Atoll, and the trade is in cowrie shells, with cocoa-nuts and fish [12]. The language is Singalese; and there are some Mahometans. The Lacadive islands form a more extended group, though only thirty in number. They also trade in cocoa-nuts and fish; and ambergris is often found floating in the vicinity.

[12] Pennant, i. 51.

END OF THE FIRST VOLUME.

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APPENDIX

TO

THE FIRST VOLUME.

No. I. *Treaties of Campo Formio* 1797, *and of Luneville* 1801.

*** *These Treaties having introduced considerable Alterations into European Geography, it was thought adviseable to subjoin them.*

1. *Treaty of Campo Formio, with the Secret Articles,* 17th October, 1797.

HIS majesty the emperor of the Romans, king of Hungary and Bohemia, and the French republic, being desirous to consolidate a peace, the basis of which was laid in the preliminaries signed at the castle of Eckenwald, near Leoben in Stiria, on the 18th of April 1797, (the 29th Germinal, 5th year of the French republic, one and indivisible,) have named for their plenipotentiaries; viz. his majesty the emperor and king, the Sieur D. Martius Mastrily, and the noble Neapolitan patrician Marquis de Gallo, knight of the royal order of St. Januarius, gentleman of the bedchamber to his majesty the king of the two Sicilies, and his ambassador extraordinary at the court of Vienna; the Sieur Louis, Count of the holy Roman empire, de Cobenzel, and great cross of the royal order of St. Stephen, chamberlain, privy councillor of his said imperial and royal apostolic majesty, and his ambassador extraordinary to his imperial majesty of all the Russias; the Sieur Maximilian count de Meerveldt, knight of the Teutonic order, and of the military order of Maria Thereſa, chamberlain and major-general of the cavalry in the armies of his said majesty the emperor and king; and the Sieur Ignatius baron de Degelmann, miniſter plenipotentiary of his said majesty to the Swiss republic:—and the French republic, Buonaparte, commander in chief of the French army in Italy.

The aforesaid plenipotentiaries, after an exchange of their respective powers, have agreed upon the following articles:

Article I. There shall be hereafter a solid, perpetual, and inviolable peace, between his majesty the emperor of the Romans, king of Hungary and Bohemia, his heirs and successors, and the French republic.

The contracting parties shall give the greatest attention to the maintaining, between themselves and their respective dominions the most perfect harmony, without hereafter permitting on either side any kind of hostilities to be committed, either by sea or land, for any cause or under any pretence whatever; and they shall carefully avoid for the future any thing which might prejudice the union happily established. There shall not be granted any succour or protection either directly or indirectly, to those who shall attempt any thing injurious or prejudicial against either of the contracting parties.

II. Immediately after the exchange of the ratifications of the present treaty, the contracting parties shall take off all sequestrations imposed on the effects, rights, and properties of individuals residing in the respective territories and countries that are united to them, and also of the public establishments situated therein; they bind themselves to pay all the debts they may have contracted, for pecuniary advances made to them by the said individuals, and public establishments, and to discharge or reimburse all the annuities settled to their advantage by each of the contracting parties. The present article is declared to extend to the Cisalpine republic.

III. His majesty the emperor, king of Hungary and Bohemia, renounces for himself and his successors, in favour of the French republic, all his rights and titles to the ci-devant *Austrian Netherlands*. — The

French republic shall enter on the perpetual possession of these countries, in full right and sovereignty, and on all the territorial possessions dependent thereon.

IV. All debts mortgaged before the war, on the land of the countries expressed in the preceding articles, and which mortgages shall have been drawn up with the usual formalities, shall be discharged by the French republic. The plenipotentiaries of his majesty the emperor, king of Hungary and Bohemia, shall transmit a statement of them, as ſoon as possible, to the plenipotentiary of the French republic, and previous to the exchange of the ratifications, to the end, that at the time of this exchange, the plenipotentiaries of both powers may come to an agreement upon all the explanatory and additional articles of the present treaty, and sign them.

V. His majesty the emperor, king of Hungary and Bohemia, conſents that the French republic ſhall poſſeſs, in full ſovereignty, the ci-devant *Venetian islands* of the Levant, viz. Corfou, Zante, Cephalonia, St. Maure, Cerigo, and other islands dependent thereon; together with Butrinto, Larta, Vouizza, and in general all the ci-devant Venetian eſtabliſhments in Albania, which are ſituate lower down than the gulf of Lodrino.

VI. The French republic conſents that his majeſty the emperor and king ſhall poſſeſs, in full ſovereignty, the countries hereinafter mentioned, viz. *Istria*, *Dalmatia*, the ci-devant Venetian iſlands in the Adriatic, the mouths of the Caſtaro, the city of *Venice*, the Venetian canals; and the countries that lie between the hereditary ſtates of his majeſty the emperor and king, the Adriatic ſea, and the line to be drawn from the Tyrol along the torrent before Gardola, ſtretching across the lake Garda as far as Lacisa; from thence a military line ſhall be drawn to Sangiacomo, holding out an equal advantage to both parties, which line ſhall be traced out by engineer officers appointed on either ſide, previous to the exchange of the ratifications of the preſent treaty. The line or limitation ſhall then paſs the Adige to Sangiacomo, running along the left bank of that river to the mouth of the Canalblanc, comprising in it that part of Porto Legnago that lies on the right ſide of the Adige, together with a diſtrict of 3000 toiſes. The line ſhall be continued along the left bank of the Canalblanc, the left bank of the Tartaro, the left bank of the canal called Poliſella, to where it empties itſelf into the Po, and along the left bank of the great Po, as far as the ſea.

VII. His majeſty the emperor, king of Hungary and Bohemia, renounces for ever, in his own name, and in that of his ſucceſſors, &c. in favour of the *Ciſalpine republic*, all the rights and titles ariſing from theſe rights, which his ſaid majeſty might pretend to have over theſe countries before the war, and which countries at preſent conſtitute a part of the Ciſalpine republic; which republic ſhall poſſeſs them in their full right and ſovereignty, together with all their territorial dependencies.

VIII. His majeſty the emperor, king of Hungary and Bohemia, acknowledges the *Ciſalpine republic* as an independent power. *This republic comprises* the ci-devant Auſtrian Lombardy, the Bergameſque, the Breſcian, the Cremoneſque, part of the ci-devant Venetian ſtates to the eaſt and ſouth of the Legner, deſcribed in the ſixth article as the frontier of the ſtates of his majeſty the emperor in Italy, the Modeneſe, the principality of Maſſa and Carrara, and the three legations of Bologna, Ferrara, and Romagna.

IX. In all countries ceded, acquired, or exchanged in virtue of the preſent treaty, all ſequeſtration impoſed on the effects, rights, and property of individuals, belonging to theſe countries, ſhall be taken off; which individuals ſhall have been thus affected on account of the war that has ſubſiſted between his imperial and royal majeſty and the French republic; nor ſhall they on this account be moleſted in their perſons and property. Such perſons as may hereafter be deſirous to withdraw from the ſaid countries ſhall be bound to make a declaration of ſuch their intention, three months before the publication of the treaty or definitive peace: There ſhall be granted them the term of three months to enable them to ſell their effects, either moveable or immoveable, and diſpoſe of them in the manner they may judge moſt expedient.

X. The countries ceded, acquired, or exchanged, by virtue of the preſent treaty, ſhall leave the debts mortgaged on their territories, to be diſcharged by thoſe under whoſe dominion they may fall.

XI. The navigation of ſuch rivers and canals as mark the boundaries between the poſſeſſions of his majeſty the emperor, king of Hungary and Bohemia, and thoſe of the French republic, ſhall be free; without its being permitted to either of the powers to eſtabliſh any toll or cuſtom on them, or keep thereon any armed veſſel, by which, however, is not precluded any precaution which may be thought neceſſary for the protection and ſafety of the fortreſs of Porto Legnago.

XII. All ſales or alienations of property, all engagements entered into either by the cities or by the government, or by the civil adminiſtrative authorities of the ci-devant Venetian territories, for the maintenance of the German and French armies, up to the date of the ſignature of the preſent treaty, ſhall be confirmed and acknowledged as valid.

XIII. The territorial titles and archives of the different countries, ceded or exchanged by the preſent treaty, ſhall within two months from the date of the exchange of the ratification, be put into the hands of the powers which ſhall have acquired the property of them. The plans and maps of the fortreſſes, towns, and countries, which the contracting parties acquire by the preſent treaty, ſhall be faithfully given up to them. The military papers and regiſters, taken in the preſent war from the etat major of the reſpective armies, ſhall be reſtored in the ſame manner.

XIV. The two contracting parties, equally animated with the deſire of removing every ground that might interrupt the good underſtanding happily eſtabliſhed between them, mutually bind themſelves, in the moſt ſolemn manner, to contribute, to the utmoſt of their

power,

power, to the maintenance of internal tranquillity in their respective states.

XV. There shall immediately be concluded a treaty of commerce, founded upon an equitable basis, and such as shall secure to his majesty the emperor, king of Hungary, and the French republic, advantages equal to those which the most favoured nations enjoy in their respective states. Meanwhile all communications, and commercial relations, shall be restored to the situation in which they stood before the war.

XVI. No inhabitant of all the countries occupied by the Austrian and French armies shall be prosecuted or questioned, either in his person or property, on account of his political opinions, or his conduct, civil, military, or commercial, during the war that has taken place between the two powers.

XVII. His majesty the emperor, king of Hungary and Bohemia, shall not, agreeably to the principles of neutrality, admit into any of his ports, during the course of the present war, any vessels belonging to any of the belligerent powers.

XVIII. His majesty the emperor, king of Hungary and Bohemia, binds himself to cede to the *duke of Modena*, as an indemnification for the territory which that prince and his heirs possessed in Italy, the *Brisgaw;* which he shall possess upon the same conditions as those in virtue of which he possessed the Modenese.

XIX. The landed and personal property not alienated, belonging to their royal highnesses the archduke Charles, and the archduchess Christiana, which are situated in the countries ceded to the French republic, shall be restored, under the deduction of the expences of sale, within three years. The same shall be done relative to the landed and personal property of his royal highness the archduke Ferdinand, in the territory of the Cisalpine republic.

XX. There shall be held a congress, solely composed of the plenipotentiaries of the Germanic empire and the French republic, for a pacification between the two powers. This congress shall be opened a month after the signing of the present treaty, or as soon as possible.

XXI. All the prisoners of war made on either side, and the hostages given or carried away, during the present war, who have not yet been restored, shall be given back in forty days, dated from the day of the signing of the present treaty.

XXII. The warlike contributions, deliveries, furnishings, and devastations of every kind, which have taken place in the respective states of the contracting powers, shall cease from the day on which the ratifications of the present treaty shall be exchanged.

XXIII. His majesty the emperor, king of Hungary and Bohemia, and the French republic, shall mutually preserve to each other the same ceremonial, with regard to rank and other etiquettes, which was constantly observed before the war. His said majesty and the Cisalpine republic shall observe, with regard to each other, the same ceremonial of etiquette which was in use between his majesty and the republic of Venice.

XXIV. The present treaty shall be ratified by the emperor, king of Hungary and Bohemia, and by the French republic, within thirty days from this day, or sooner, if possible; and the instruments of ratification in due form shall be exchanged at Rastadt.

Done and signed at Campo Formio, near Udine, the 17th October 1797, (26th Vendemiaire, sixth year of the French republic, one and indivisible.)

(Signed) BUONAPARTE.
The MARQUIS DE GALLO.
LOUIS COUNT COBENTZEL.
The COUNT DE MEERVELDT.
The BARON DE DEGELMANN.

The executive directory ratifies and signs the present treaty of peace with his majesty the emperor, king of Hungary and Bohemia, negotiated in the name of the French republic by citizen Buonaparte, general in chief of the army of Italy, invested with powers by the executive directory, and charged with instructions to that effect.

Done in the national palace of the executive directory, 5th Brumaire, October 26, sixth year of the French republic, one and indivisible.

This treaty was ratified by the council of five hundred on the 31st October; and by the council of elders two days after.

Secret Articles, and additional Convention, of the Treaty of Campo Formio, of the 26th Vendemiaire, 6th Year, (Oct. 17, 1797.)

Article I. His majesty the emperor, king of Hungary and Bohemia, consents that the boundaries of the French republic shall extend to the undermentioned line, and engages to use his influence that the French republic shall, by the peace to be concluded with the German empire, retain the same line as its boundary; namely, the *left bank of the Rhine*, from the confines of Swisserland below Basle, to the branching off of the Nette above Andernach, including the head of the bridge at Manheim, the town and fortress of Mentz, and both banks of the Nette, from where it falls into the Rhine, to its source near Bruch. From thence the line passes by Kenscherade and Borley to Kerpen, and thence to Ludersdorf, Blantenheim, Marmagen, Coll, and Gemund, with all the circles and territory of these places along both banks of the Olff, to where it falls into the Roer, and along both banks of the Roer, including Heimbach, Nideggen, Durin, and Juliers, with their circles and territory; as also the places on the banks to Linnig included. Hence the line extends by Hoffern and Kylensdalen, Papelernod, Lutersforst, Rodenberg, Haverstoo, Anderscheid, Kaldecuchen, Vampach, Herrigen, and Grosberg, including the town of Venloo and its territory. And if, notwithstanding the mediation of his imperial majesty, the German empire shall refuse to consent to the above-mentioned boundary line of the republic, his imperial majesty hereby formally engages to furnish to the empire no more than his contingent, which shall not be employed in any fortified place; or it shall be consi-

dered as a rupture of the peace and friendship which are restored between his majesty and the republic.

II. His imperial majesty will employ his good offices, in the negotiation of the peace of the empire, to obtain, 1. That the *navigation of the Rhine*, from Hunningen to the territory of Holland, shall be free, both to the French republic and the states of the empire, on the right bank. 2. That the possessors of territory near the mouth of the Moselle shall never, and on no pretence, attempt to interrupt the *free navigation* and passage of ships and other vessels *from the Moſelle* into the Rhine. 3. The French republic shall have the *free navigation of the Meuſe;* and the tolls and other imposts, from Venloo to Holland, shall be abolished.

III. His imperial majesty *renounces*, for himself and his successors, the sovereignty and possession of *the county of Falkenſtein* and its dependencies.

IV. The countries which his imperial majesty takes possession of, in consequence of the sixth article of the public definitive treaty this day signed, shall be considered as an indemnification for the territory given up by the seventh article of the public treaty, and the foregoing article. This renunciation shall only be in force when the troops of his imperial majesty shall have taken possession of the countries ceded by the said articles.

V. The French republic will employ its influence that his majesty the emperor shall receive the *archbiſhoprick of Salzburg*, and that part of the circle of *Bavaria* which lies between the archbishopric of Salzburg, the river Inn, Salza, and Tyrol; including the town of Wasserburg on the right bank of the Inn, with an arrondissement of 3000 toises.

VI. His imperial majesty, at the conclusion of the peace with the empire, will give up to the French republic the sovereignty and possession of the *Frickthal*, and all the territory belonging to the house of Austria on the *left bank of the Rhine*, between Zurgach and Basle, provided his majesty, at the conclusion of the said peace, receives a proportionate indemnification. The French republic, in consequence of particular arrangements to be made, shall unite the above-mentioned territory with the Helvetic republic, without farther interference on the part of his imperial majesty or the empire.

VII. The two contracting powers agree that when, in the ensuing peace with the German empire, the French republic shall make an acquisition in Germany, his imperial majesty shall receive an equivalent; and if his imperial majesty shall make such an acquisition, the French republic shall in like manner receive an equivalent.

VIII. The prince of Nassau Dietz, late *stadtholder* of Holland, shall receive a territorial indemnification; but neither in the vicinity of the Austrian possessions, nor in the vicinity of the Batavian republic.

IX. The French republic makes no difficulty to restore the *king of Prussia* his possessions on the left bank of the Rhine. No new acquisition shall however be proposed for the king of Prussia. This the two contracting powers mutually guarantee.

X. Should the king of Prussia be willing to cede to the French and Batavian republics some small parts of his territory on the left bank of the Meuse, as Sevenger, and other possessions towards the Yssel, his imperial majesty will use his influence that such cessions shall be accepted and made valid by the empire.

XI. His imperial majesty will not object to the manner in which the *imperial fiefs* have been disposed of by the French republic in favour of the Ligurian republic. His imperial majesty will use his influence, together with the French republic, that the German empire will renounce all feudal sovereignty over the countries which make a part of the Cisalpine and Ligurian republics, as also the imperial fiefs, such as Laniguiana, and those which lie between Tuscany and the states of Parma, the Ligurian and Lucchese republics, and the late territory of Modena; which fiefs make a part of the Cisalpine republic.

XII. His imperial majesty and the French republic will, in concert, employ their influence, in the course of concluding the peace of the empire, that the princes and states of the empire who, in consequence of the stipulations of the present treaty of peace, or in consequence of the treaty to be concluded with the empire, shall suffer any loss in territory or rights (particularly the electors of Mentz, Treves, and Cologne, the elector palatine of Bavaria, the duke of Wirtemberg and Teck, the margrave of Baden, the duke of Deux Ponts, the landgraves of Hesse Cassel and Darmstadt, the princes of Nassau Saarbruck, Salm, Korburg, Lowenstein, Westheim, and Wied Runckel, and the count de Leyn), shall receive proportionable indemnifications in Germany, which shall be settled by mutual agreement with the French republic.

XIII. The troops of his imperial majesty, twenty days after the ratifications of the present treaties, shall evacuate the towns and fortresses of Mentz, Ehrenbreitstein, Philipſburg Manheim, Kunigstein, Ulm, and Ingolstadt; as also the whole territory appertaining to the German empire, to the boundaries of the hereditary states.

XIV. The present secret articles shall have the same force as if they were inserted word for word in the public treaty of peace this day signed; and shall, in like manner, be ratified at the same time by the two contracting powers; which ratifications shall be exchanged in due form at Rastadt.

Done and signed at Campo Formio, on the 17th Oct. 1797, 26th Vendemiaire, in the 6th year of the French republic, one and indivisible.

(Signed) BUONAPARTE.
MARQUIS DE GALLO.
LOUIS COUNT COBENTZEL.
COUNT MEERFELDT, Major-Gen.
COUNT DEGELMANN.

2. *Treaty of Luneville*, 9th Feb. 1801.

HIS majesty the emperor, king of Hungary and Bohemia, and the first consul of the French republic, in the name of the French people, being equally desirous to put an end to the misfortunes of the war, have resolved to proceed to the conclusion of a definitive treaty of peace and friendship.

His said imperial and royal majesty, not being less ardently desirous to make the Germanic empire partake of the benefits of peace, and the present junctures not leaving time necessary for the empire being consulted, and being able to intervene deputies in the negotiation; and his said majesty considering besides what has been consented to by the deputation of the empire, in the preceding congress of Rastadt, has resolved, (as it has been done in similar circumstances,) to stipulate in the name of the Germanic body.

In consequence of which the contracting parties have appointed for their plenipotentiaries—his imperial and royal majesty, the Sieur Louis count of the holy Roman empire, de Cobentzel, knight of the golden fleece, grand cross of the royal order of St. Stephen, and of the order of St. John of Jerusalem, chamberlain, actual privy counsellor of his said imperial and royal majesty, his minister of conferences, and the vice-chancellor of court and state; and the first consul of the French republic, in the name of the French people, citizen Joseph Buonaparte counsellor of State:

Who, after having exchanged their full powers, have determined on the following articles:

Article I. There shall be for the future, and for ever, peace, friendship, and good intelligence, between his majesty the emperor, king of Hungary and Bohemia, stipulating as well in his name as in the name of the Germanic empire, and the French republic; his said majesty pleading himself to make the said empire ratify in good and due form, the present treaty. The greatest attention will be given on one part, and on the other, to the maintenance of a perfect harmony, and to prevent any kind of hostility, by land or by sea, for whatever cause, and under whatever pretence, by applying themselves with care to entertain the union happily re-established. No assistance and protection will be given, neither directly nor indirectly, to those who would prejudice one or the other of the contracting parties.

II. The *cession of the* ci-devant *Belgic provinces* to the French republic, stipulated by the third article of the treaty of Campo Formio, is here renewed in the most formal manner; so that his imperial and royal majesty, for himself and his successors, as well in his name as in the name of the Germanic empire, renounces all his rights and titles to the aforesaid provinces, which shall be possessed for ever in full sovereignty and property, by the French republic, with all the territorial estates belonging to them.

There shall likewise be given up to the French republic, by his imperial and royal majesty, and with the formal consent of the empire—

1st. The *county of Falkenstein*, with all its dependencies:

2dly. The *Frickthal*, and every thing which belongs to the house of Austria, *on the left bank of the Rhine*, between Zurzach and Basle; the French republic reserving to herself to yield this last country to the Helvetic republic.

III. In the same manner, in renewing and confirming the sixth article of the treaty of Campo Formio, his majesty the emperor and king shall possess in full sovereignty and property the countries hereafter designed, to wit:—*Istria*, *Dalmatia*, and the Venetian states of the Adriatic dependent thereon; the mouths of the Catara, the city of *Venice*, the marshes (les lagunes), and the country comprized between the hereditary states of the emperor, the Adriatic sea, and the Adige, from its quitting Tyrol to its embouchure in the said sea, the *thalweg* of the Adige serving for a line of limitation: and as the adopting of this line will intersect the towns of Verona and Porto Legnago, drawbridges shall be established in the middle of them, in order to mark their separation.

IV. The eighteenth article of the treaty of Campo Formio is in like manner renewed, so far as obliges his majesty the emperor and king to cede to the *duke of Modena*, as an indemnity for the country this prince and his heirs had in Italy, the *Brisgaw*, which he shall possess on the same conditions as those in virtue of which he possessed the Modenese.

V. It is also agreed, that his royal highness the grand duke of Tuscany renounces for himself, his successors and assigns, the *grand duchy of Tuscany*, and that part of the island of *Elba* which is dependant thereon, as well as all rights and titles resulting from the dominion of the said states; the same shall be possessed in full sovereignty and property by his royal highness *the infant duke of Parma*. The grand duke will obtain a full indemnity in Germany for the loss of his estates in Italy. The grand duke may dispose, as he pleases, of the estates and property which he particularly possesses in Tuscany, whether by personal acquisition, or by heirship of the personal acquisitions of the deceased emperor Leopold II., his father, or of the deceased emperor Francis I., his grandfather. It is also agreed, that the trusts, establishments, and other property of the grand duchy, as well as the debts from mortgages on the country, shall be transferred to the new grand duke.

VI. His majesty the emperor and king, as well in his own name as in that of the Germanic empire, consents that in future the French republic shall possess, in full sovereignty and property, the countries and domains situated on the *left bank of the Rhine*, and which made part of the German empire, in a manner conformable to that which had been expressly consented to at the congress of Rastadt by the deputation of the empire, and approved by the emperor; the *thalweg* of the Rhine being hereafter the limit between the French republic and the German empire, to wit, from the place where the Rhine leaves the Helvetic territory, to that where it enters the Batavian territory. In consequence of which the French republic formally renounces every possession whatsoever on the right bank

bank of the Rhine, and consents to restore to whomsoever they may belong, the places of Dusseldorff, Ehrenbreitstein, Philipsburg, the fort of Cassel, and other fortifications opposite Mayence on the right bank; as also the fort of Kehl and old Brissac, upon the express conditions that those places and forts shall continue and remain in the same state as at their evacuation.

VII. And as in virtue of the cession which the empire makes to the French republic, several princes and states of the empire will be dispossessed, in the whole or in part, of what belonged to them, particularly; while collectively the German empire has to support the losses resulting from the stipulations of the present treaty; it is agreed between his majesty the emperor and king, as well in his own name as in that of the German empire, and the French republic, that, conformably to the principles laid down and established at the congress of Rastadt, the empire is bound to give to the hereditary princes, so dispossessed on the left bank of the Rhine, an indemnification to be taken from the body of the empire, according to the arrangements which, after the said basis, will be ultimately determined upon.

VIII. Throughout all the ceded countries, acquired or exchanged by the present treaty, it is agreed upon, as it had been by the 4th and 10th articles of the treaty of Campo Formio, that those to whom they will belong take upon themselves the debts as mortgages upon the land of the said country; but in consideration of the difficulties which, in regard to this matter, the interpretation of the said articles in the treaty of Campo Formio gave rise to, it is expressly understood that the French republic only takes upon itself the debts arising from the loans formerly consented to by the states of the ceded countries, or the expences incurred by the effective administration of the said countries.

IX. Immediately after the exchange of the ratification of the present treaty, there shall be granted, in all the countries ceded, acquired, or exchanged, by the said treaty, to all the inhabitants and proprietors whomsoever, an exemption from the sequestration put on their goods, effects, and revenues, on account of the war which has taken place. The contracting parties oblige themselves to discharge all they may owe for principal lent to them, by the said individuals, as well as by the public establishments of the said countries; and to pay or reimburse all the interest accruing to them by each of the said parties. In consequence of which it is expressly stipulated that the proprietors of stock of the bank of Vienna, become French, shall continue to enjoy the benefit of their stock, and receive the interest accrued or to accrue, notwithstanding any sequestration or forfeiture, which shall be considered as not having taken place; particularly the forfeiture resulting from the French proprietors not having furnished the thirty, and the cent. per cent. demanded of the proprietors of stock of the bank of Vienna by his majesty the emperor and king.

X. The contracting parties shall reciprocally remove the sequestrations that have been put, in consequence of the war, on the goods, rights, and revenues of the subjects of his majesty the emperor, or of the empire, in the territory of the French republic; and of the French citizens, in the states of his said majesty, or of the empire.

XI. The present treaty of peace, particularly the articles 8, 9, 10, and the 15th hereinafter, are declared common to the Batavian, Helvetic, Casalpine, and Ligurian republics. The contracting parties mutually guarantee the independence of the said republics; and the right of the people who inhabit them to adopt such form of government as they shall judge fit.

XII. His imperial and royal majesty renounces, for himself and his successors, in favour of the Cisalpine republic, all rights and titles accruing from those rights, which he might claim over those countries which he possessed before the war; and which, under the terms of the 8th article of the treaty of Campo Formio, make a part of the *Cisalpine republic*, which shall possess them in full sovereignty and property, with all the territorial property depending on them.

XIII. His imperial and royal majesty, as well in his own name as in the name of the Germanic empire, confirms the adherence already given, by the treaty of Campo Formio, to the re-union of the heretofore *imperial fiefs* to the Ligurian republic; and renounces all rights and titles accruing from those rights over the said fiefs.

XIV. Conformably to the article of the treaty of Campo Formio, the navigation of the Adige, serving as the limit between the states of his imperial and royal majesty, and those of the Cisalpine republic, shall be free; so that neither party shall establish thereon any toll, nor keep any armed vessels thereon.

XV. All the prisoners of war, taken on the one side and the other, as well as the hostages taken or given during the war, who have not yet been restored, shall be restored within forty days from the signature of the present treaty.

XVI. All the real and personal property of his royal highness the archduke Charles, not alienated, and of the heirs of her late royal highness the archduchess Christiana, situated in the countries ceded to the French republic, shall be restored to them on condition that the said property shall be sold within the space of three years. The same shall extend to the real and personal property of their royal highnesses the archduke Ferdinand, and the archduchess Beatrix his wife, which they possessed in the territory of the Cisalpine republic.

XVII. The 12th, 13th, 15th, 16th, 17th, and 18th articles of the treaty of Campo Formio shall be again in full force, to be executed according to their form and tenor, as if they were inserted verbatim in the present treaty.

XVIII. The contributions, levies, supplies of provisions and other supplies of war, shall cease from the date of the exchange of the ratifications of the present treaty, on the part of his majesty the emperor, and by the Germanic empire, and on the part of the French republic.

XIX. The

XIX. The present treaty shall be ratified by his majesty the emperor and king, by the empire, and by the French republic, within thirty days, or sooner if it can be done; and it is agreed upon that the armies of the two powers shall remain in the positions where they now are, both in Germany and Italy, until the said ratifications of the emperor and king, of the empire, and of the French republic shall be at the same time exchanged at Luneville by the respective plenipotentiaries. It is also agreed upon, that ten days after the exchange of the said ratifications, the armies of his imperial and royal majesty shall re-enter his hereditary possessions, which shall in the same time be evacuated by the French armies; and that thirty days after the said exchange the French armies shall evacuate the whole of the territory of the said empire.

Done and signed at Luneville, the 20th Pluvoise, 9th year of the French republic—9th Feb. 1801.

LOUIS COUNT COBENTZEL.
JOSEPH BUONAPARTE.

No. II. *Treaty of Peace between Great Britain and the French Republic, concluded at Amiens, 27th March, 1802*.*

Article I. THERE shall be peace, friendship, and good understanding between the French republic, his majesty the king of Spain, his heirs and successors, and the Batavian republic, on the one side, and his majesty the king of the united kingdom of Great Britain and Ireland, his heirs and successors on the other part. The contracting parties shall use their utmost efforts to preserve a perfect harmony between their respective countries, without permitting any act of hostility whatever, by sea or by land, for any cause, or under any pretext. They shall carefully avoid every thing which might for the future disturb the happy union now re-established between them; and shall not give any succour or protection directly or indirectly, to those who would wish to injure any one of them.

II. All the prisoners made on one side and the other, as well by land as by sea, and the hostages carried off or delivered up during the war, and to the present day, shall be restored without ransom, in six weeks at the latest, to be reckoned from the day on which the ratifications of the present treaty are exchanged; and on paying the debts which they shall have contracted during their captivity. Each of the contracting parties shall respectively discharge the advances which shall have been made by any of the contracting parties, for the support and maintenance of prisoners, in the countries where they have been detained. There shall be appointed by mutual consent, for this purpose, a commission specially empowered to ascertain and determine the compensation which may be due to any one of the contracting parties. The time and the place shall likewise be fixed by mutual consent, for the meeting of the commissioners, who shall be entrusted with the execution of this article; and who shall take into account not only the expences incurred on account of the prisoners of the respective nations, but likewise on account of the foreign troops who, before being taken, were in the pay and at the disposal of one of the contracting parties.

III. His Britannic majesty restores to the French republic and its allies, viz. his catholic majesty and the Batavian republic, all the possessions and colonies which respectively belonged to them, and which have been either occupied or conquered by the British forces during the course of the present war, with the exception of the island of Trinidad, and of the Dutch possessions in the island of Ceylon.

IV. His catholic majesty cedes and guarantees, in full property and sovereignty, the island of Trinidad, to his Britannic majesty.

V. The Batavian republic cedes and guarantees, in full property and sovereignty, to his Britannic majesty all the possessions and establishments in the island of Ceylon, which previous to the war belonged to the republic of the United Provinces, or to the Dutch East India Company.

VI. The port of the Cape of Good Hope remains to the Batavian republic, in full sovereignty, in the same manner as it did previous to the war.—The ships of every kind belonging to the other contracting parties shall be allowed to enter the said port, and there to purchase what provisions they may stand in need of, as heretofore, without being liable to pay any other imposts than such as the Batavian republic compels the ships of its own nation to pay.

VII. The territories and possessions of her most faithful majesty are maintained in their integrity, such as they were antecedent to the war. Nevertheless, the boundaries of French and Portuguese Guiana are fixed by the river Arawari, which empties itself into the ocean above Cape North, near the islands Nuovo and Penetentia, about a degree and a third of north latitude. These boundaries shall run along the river Arawari from its mouth the most distant from Cape North, to its source, and afterwards on a right line drawn from that source to the Rio-Branco towards the

* Translated from the French counterpart.

west.

west. In consequence the northern bank of the river Arawari, from its most distant mouth to its source, and the territories that lie to the north of the line of the boundaries, laid down as above, shall belong in full sovereignty to the French republic. The southern bank of the said river, from the same mouth, and all the territories to the south of the said line, shall belong to her most faithful majesty.—The navigation of the river Arawari, along the whole of its course, shall be common to both nations.—The arrangements which have been agreed upon between the courts of Madrid and Lisbon, respecting the settlement of their boundaries in Europe, shall nevertheless be adhered to, conformably to the stipulations of the treaty of Badajoz*.

VIII. The territories, possessions, and rights of the Sublime Porte are maintained in their integrity, as they were before the war.

IX. The republic of the Seven Islands is recognized.

X. The Islands of Malta, Gozo, and Comino, shall be restored to the order of St. John of Jerusalem, to be held on the same conditions on which it possessed them before the war, and under the following stipulations:

1. The knights of the order, whose languages shall continue to subsist after the exchange of the ratification of the present treaty, are invited to return to Malta as soon as the exchange shall have taken place. They will there form a general chapter, and proceed to the election of a grand master, chosen from among the natives of the nation which preserve their language†, unless that election has been already made since the exchange of the preliminaries.—It is understood that an election made subsequent to that epoch shall alone be considered valid, to the exclusion of any other that may have taken place at any period prior to that epoch.

2. The governments of the French republic and of Great Britain, desiring to place the order and island of Malta in a state of entire independence, with respect to them, agree that there shall not be in future either a French or English language, and that no individual belonging to either the one or the other of these powers shall be admitted into the order.

3. There shall be established a Maltese language which shall be supported by the territorial revenues and commercial duties of the island. This language shall have its peculiar dignities, an establishment and an hotel. Proofs of nobility shall not be necessary for the admission of knights of this language; and they shall be moreover admissible to all offices, and shall enjoy all privileges, in the same manner as the knights of the other languages. At least half of the municipal administrative, civil, judicial, and other employments depending on the government, shall be filled by inhabitants of the islands of Malta, Gozo, and Comino.

4. The forces of his Britannic majesty shall evacuate the island and its dependencies within three months from the exchange of the ratifications, or sooner if possible. At that epoch it shall be given up to the order, in its present state, provided the grand master or commissaries, fully authorised according to the statutes of the order, shall be in the island to take possession; and that the force which is to be provided by his Sicilian majesty, as is hereafter stipulated, shall have arrived there.

5. One half of the garrison at least shall be always composed of native Maltese; for the remainder the order may levy recruits in those countries only which continue to possess the languages *(posseder les langues)*. The Maltese troops shall have Maltese officers. The command in chief of the garrison, as well as the nomination of the officers, shall pertain to the grand master; and this right he cannot resign, even temporarily, except in favour of a knight, and in concurrence with the advice of the council of the order.

6. The independence of the isles of Malta, of Gozo, and Comino, as well as the present arrangement, shall be placed under the protection and guarantee of France, Great Britain, Austria, Spain, Russia, and Prussia.

7. The neutrality of the order, and of the island of Malta, with its dependencies, is proclaimed.

8. The ports of Malta shall be opened to the commerce and navigation of all nations, who shall there pay equal and moderate duties: these duties shall be applied to the cultivation of the Maltese language, as specified in paragraph 3; to that of the civil and military establishments of the island; as well as to that of a general *lazaretto*, open to all ensigns.

9. The states of Barbary are excepted from the conditions of the preceding paragraphs, until, by means of an arangement to be procured by the contracting parties, the system of hostilities, which subsists between the states of Barbary and the order of St. John, or the powers possessing the languages, or concurring in the composition of the order, shall have ceased.

10. The order shall be governed, both with respect to spirituals and temporals, by the same statutes which were in force when the knights left the isle, as far as the present treaty shall not derogate from them.

11. The regulations contained in the paragraphs 3, 5, 7, 8, and 10, shall be converted into laws and perpetual statutes of the order, in the customary manner: and the grand master, (or if he shall not be in the

* By that treaty the small province of Olivenza was ceded to Spain, and the river Guadiana constituted the boundary between Spain and Portugal. By the treaty between France and Portugal, 29th September 1801, it was assumed "that the boundaries of French and Portuguese Guiana shall be determined in future by the river Carapanatuba, which flows into the river Amazon, about a third of a degree of north latitude above fort Macapa. These limits shall follow the course of the river to its source, whence they shall take a direction to the grand chain of mountains which divide the two rivers; they shall follow the windings of that chain to the point nearest to Rio Branco, between the second and third degree north of the equator."

† A language here signifies a right of election, as belonging to a particular catholic nation. Thus, in the Maltese form, the knights chosen in France were styled of the French language, &c.

island

island at the time of its restoration to the order, his representative,) as well as his successors, shall be bound to take an oath for their punctual observance.

12. His Sicilian majesty shall be invited to furnish two thousand men, natives of his states, to serve in garrison of the different fortresses of the said islands. That force shall remain one year, to bear date from their restitution to the knights; and if at the expiration of this term, the order should not have raised a force sufficient, in the judgment of the guaranteeing powers, to garrison the island and its dependencies, such as is specified in the paragraph, the Neapolitan troops shall continue there until they shall be replaced by a force deemed sufficient by the said powers.

13. The different powers designated in the 6th paragraph, viz. France, Great Britain, Austria, Spain, Russia and Prussia, shall be invited to accede to the present stipulations.

XI. The French troops shall evacuate the kingdom of Naples and the Roman states; the English forces shall also evacuate Porto Ferrajo, and generally all the ports and islands which they occupy in the Mediterranean or the Adriatic.

XII. The evacuations, cessions, and restitutions, stipulated by the present treaty, shall be executed in Europe within a month; on the continent and seas of America and Africa, in three months; on the continent and seas of Asia, in six months, which shall follow the ratification of the present definitive treaty; except in case of a special reservation.

XIII. In all cases of restitution agreed upon by the present treaty, the fortifications shall be restored in the condition they were in at the time of signing the preliminaries; and all the works which shall have been constructed since their occupation, shall remain untouched. It is agreed besides, that in all the stipulated cases of cessions, there shall be allowed to the inhabitants, of whatever rank or nation they may be, a term of three years, reckoning from the ratification of the present treaty, to dispose of all their properties, whether acquired or possessed by them, before or during the continuance of the present war; during which term of three years they shall have free and entire liberty to exercise their religion, and to enjoy their fortunes. The same power is granted in the countries that are hereby restored, to all persons, whether inhabitants or not, who shall have formed any establishments there during the time that those countries were in the possession of Great Britain. As to the inhabitants of the countries restored or ceded, it is hereby agreed that no person shall, under any pretence, be prosecuted, disturbed, or molested, either in person or property on account of his political conduct or opinion, or for his attachment to any of the contracting parties, or on any account whatever, except debts contracted with individuals, or for acts subsequent to the present treaty.

XIV. All the sequestrations laid on either side, upon funds, revenues, and credits, of what nature soever they may be, belonging to any of the contracting powers, or to their citizens or subjects, shall be taken off immediately after the signature of this definitive treaty. The decision of all claims among the individuals of the respective nations, for debts, property, effects, or rights of any nature whatsoever, which should, according to received usages and the law of nations, be produced at the epoch of the peace, shall be referred to the competent tribunals; in all those cases speedy and complete justice shall be done in the countries wherein those claims shall be respectively preferred.

XV. The fisheries on the coasts of Newfoundland and of the adjacent islands, and in the gulf of St. Lawrence, are replaced on the same footing as they were before the war. The French fishermen of Newfoundland, and the inhabitants of the islands of St. Pierre and Miquelon, shall have liberty to cut such wood as may be necessary for them in the bays of Fortune and Despair, during one year, reckoning from the ratification of the present treaty.

XVI. To prevent all grounds of complaint and disputes which might arise on account of captures which may have been made at sea subsequent to the signing of the preliminaries, it is reciprocally agreed that the ships and property which may have been taken in the Channel and in the North Seas, after a space of twelve days, reckoning from the exchange of the ratifications of the preliminary articles, shall be restored on one side and the other; that the term shall be one month for the space from the Channel and the North Seas as far as the Canary islands inclusively, as well in the Ocean as in the Mediterranean; two months from the Canary Islands to the Equator; and finally, five months in all the other parts of the world, without any further exception or distinction of time or place.

XVII. The ambassadors, ministers, and other agents of the contracting powers, shall enjoy respectively in the states of the said powers, the same rank, privileges, prerogatives, and immunities, which were enjoyed before the war by agents of the same class.

XVIII. The branch of the house of Nassau, which was established in the ci-devant republic of the United Provinces, now the Batavian republic, having experienced some losses, as well with respect to private property as by the change of constitution adopted in those countries, an equivalent compensation shall be procured for the losses which it shall be proved to have sustained.

XIX. The present definitive treaty of peace is declared common to the Sublime Ottoman Porte, the ally of his Britannic majesty; and the Sublime Porte shall be invited to transmit its act of accession as soon as possible.

XX. It is agreed that the contracting parties, upon requisitions made by them respectively, or by their ministers or officers duly authorised for that purpose, shall be bound to deliver up to justice persons accused of murder, forgery, or fraudulent bankruptcy, committed within the jurisdiction of the requiring party, provided that this shall only be done in cases in which the evidence of the crime shall be such, that the laws of the place, in which the accused person shall be discovered, would have authorised the detaining and bringing him to trial had the offence been committed there.

there. The expences of the arrest and the prosecution shall be defrayed by the party making the requisition; but it is understood that this article has no sort of reference to crimes of murder, forgery, or fraudulent bankruptcy committed before the conclusion of this definitive treaty.

XXI. The contracting parties promise to observe, sincerely and faithfully, all the articles contained in the present treaty; and will not suffer any sort of counteraction, direct or indirect, to be made to it by their citizens, or respective subjects. And the contracting parties guarantee, generally and reciprocally, all the stipulations of the present treaty.

XXII. The present treaty shall be ratified by the contracting parties within the space of thirty days, or sooner if possible; and the ratifications shall be exchanged in due form at Paris.

In testimony whereof we, the undersigned plenipotentiaries, have signed with our hands, and in virtue of our respective full powers, the present definitive treaty, causing it to be sealed with our respective seals.

Done at Amiens, the 6th Germinal, in the year 10, (March 27, 1802.)

(Signed) J. Bonaparte.
Cornwallis.
Azara.
Schimmelpenninck.

No. III. *Treaty of Presburg*, 26 *Dec.* 1805.

His Majesty the emperor of Germany and of Austria, and his majesty the emperor of the French, king of Italy, equally animated with a desire to put an end to the calamities of war, have resolved to proceed without delay to the conclusion of a definitive treaty of peace, and have in conseqnence named as plenipotentiaries, to wit:—

His majesty the emperor of Germany and of Austria, the prince John of Lichtenstein, prince of the Holy Roman Empire, Grand Cross of the military order of Maria Teresa, chamberlain, lieutenant-general of the armies of his said majesty the emperor of Germany and of Austria, and proprietor of a regiment of hussars; and count Ignaz de Guylai, commander of the military order of Maria Teresa, chamberlain of his said majesty the emperor of Germany and Austria, lieutenant-general of his armies, and proprietor of a regiment of infantry; and his majesty the emperor of France, king of Italy, Charles Maurice Talleyrand Perigord, grand chamberlain, minister of the foreign relations of his said majesty the emperor of France, and king of Italy, grand cordon of the legion of honour, and knight of the red and black eagle of Prussia; who having exchanged their full powers, have agreed as follows:—

Article I. There shall be from the date of this day, peace and friendship between his majesty the emperor of Germany and Austria, and his majesty the emperor of the French, king of Italy, their heirs and successors, their states and subjects respectively for ever.

II. France shall continue to possess in property and sovereignty the duchies, principalities, lordships, and territories beyond the Alps, which were before the present treaty united and incorporated with the French empire, or governed by the laws and government of France.

III. His majesty the emperor of Germany and Austria, for himself, his heirs and successors, recognizes the dispositions made by his majesty the emperor of France, king of Italy, relative to the principalities of Lucca and Piombino.

IV. His majesty the emperor of Germany and Austria renounces, as well for himself as for his heirs and successors, that part of the states of the republic of Venice, ceded to him by the treaties of Campio Formio and Luneville, which shall be united in perpetuity to the king of Italy.

V. His majesty the emperor of Germany and of Austria, acknowlegdes his majesty the emperor of the French as king of Italy; but it is agreed that, in conformity with the declaration made by his majesty the emperor of the French, at the moment when he took the crown of Italy, that as soon as the parties named in that declaration shall have fulfilled the conditions therein expressed, the crowns of France and Italy shall be separated for ever, and cannot in any case be united on the same head. His majesty the emperor of Germany binds himself to acknowledge, on the separation, the successor, his majesty the emperor of the French, shall appoint to himself as king of Italy.

VI. The present treaty of peace is declared to comprehend their most serene highnesses the electors of Bavaria, Wirtemberg, and Baden, and the Batavian republic, allies of his majesty, the emperor of the French, in the present war.

VII. The electors of Bavaria and Wirtemberg having taken the title of king, without ceasing nevertheless to belong to the Germanic confederation, his majesty the emperor of Germany and Austria acknowledges them in that character.

VIII. His majesty the emperor of Germany and Austria, as well for himself, his heirs and successors, as for the princes of his house, their heirs and successors respectively, renounces the principalities, lordships, domains, and territories, hereinafter specified:

Cedes and abandons to his majesty the king of Bavaria

Bavaria the margraviate of Burgau and its dependencies, the principality of Eichstadt, the part of the territory of Passau belonging to the elector of Salzburg, and situated between Bohemia, Austria, the Danube, and the Inn; the country of Tyrol, comprehending therein the principalities of Brixen and Botzen, the seven lordships of the Voralberg, with their detached dependencies; the county of Hokenems, the county of Konigsegg, Rottensels, the lordships of Tetnany and Argen, and the town and territory of Lindau.

To his majesty the king of Wirtemberg, the five cities of the Danube, to wit——Ehingen, Munderkengen, Rufflingen, Mengen, and Salgaw, with their dependencies, the city of Constance excepted, that part of the Brisgaw which extends in the possession of Wirtemberg, and situated to the east of a line drawn from Schlegelburg to Molbach, and the towns and territories of Willengen and Brentingen.

To his most serene highness the elector of Baden, the Brisgaw (with the exception of the branch and separate portions above described), the Ortensaw and their dependencies, the cities of Constance, and the commandery of Meinau.

The principalities, lordships, domains, and territories above mentioned, shall be possessed respectively by their majesties the kings of Bavaria and Wirtemberg, and by his most serene highness the elector of Baden, as well in paramount as in full property and sovereignty, in the same manner, by the same titles, and with the same rights and prerogatives, with which they were possessed by his majesty the emperor of Germany and Austria, or the princes of his house, and not otherwise.

IX. His majesty the emperor of Germany and Austria, acknowledges the debts contracted by the house of Austria, for the benefit of private persons and public establishments of the country, making at present an integrant part of the French empire; and it is agreed that his said majesty shall remain free from all obligation, with respect to any debts whatsoever which the house of Austria may have contracted, on the ground of the possession, and of securities on the soil of the countries which it renounces by the present treaty.

X. The county of Salzburg, and of Berchtolsgaden, belonging to his royal and electoral highness prince Ferdinand, shall be incorporated with the empire of Austria; and his majesty the emperor of Germany and Austria shall possess them in full property and sovereignty, but by the title of Duchy only.

XI. His majesty the emperor of the French, king of Italy, engages himself to obtain, in favour of the archduke Ferdinand, elector of Salzburg, the cession by his majesty the king of Bavaria, of the principality of Wurtzburg, such as it has been given to his said majesty by the recess of the deputation of the Germanic empire, of the 25th Feb. 1803.

The electoral title of his royal highness shall be transferred to this principality, which his royal highness shall possess in full property and sovereignty, in the same manner, and on the same conditions that he possessed the electorate of Salzburg.

And with respect to debts, it is agreed that the new possessor shall stand charged only with those debts resulting from loans formerly agreed to by the states of the country, or the expences incurred for the effective administration of the said country.

XII. The dignity of Grand Master of the Teutonic Order, its rights, domains, and revenues, which before the present war were dependencies of Mergentneim, the chief place of the order; the other rights, domains, and revenues, which shall be found to belong to the grand mastership at the time of the exchange of the ratifications of the present treaty; as well as the domains and revenues in possession of which the said order shall be, at the same epoch shall become hereditary in the person and descendants in the direct male line, according to the order of primogeniture, in whichever of the princes of the imperial house, as shall be appointed by his majesty the emperor of Germany and Austria. His majesty the emperor Napoleon promises his good offices to obtain, as soon as possible, for his royal highness the archduke Ferdinand, a full and entire indemnity in Germany.

XIII. His majesty the elector of Bavaria shall occupy the city of Augsburg and its territory, and unite them to his states, in full power and sovereignty. In the same manner the king of Wirtemberg may occupy, unite to his states, and possess in full property and sovereignty, the county of Borndorff; and his majesty the emperor of Germany and Austria engages himself to give no opposition.

XIV. Their majesties the kings of Bavaria and Wirtemberg, and his most serene highness the elector of Baden, shall enjoy over the territories ceded, as well as over their ancient estates, the plenitude of sovereignty, and all the rights resulting from it, which have been guaranteed to them by his majesty the emperor of the French, king of Italy, in the same manner as his majesty the emperor of Germany and Austria, and his majesty the king of Prussia, over their German states. His majesty the emperor of Germany and Austria, both as chief of the empire, and as co-estates, engages himself not to oppose any obstacle to the execution of the acts which they may have made, or will make in consequence.

XV. His majesty the emperor of Germany and Austria, as well for himself, his heirs and successors, as for the princes of his house, their heirs and successors, renounces all the rights, as well of sovereignty as of paramount right to all pretensions whatsoever, actual or eventful, on all the states, without exception, of their majesties the kings of Bavaria and Wirtemberg, and of his most serene highness the elector of Baden, and generally on all the states, domains, and territories, comprised in the circles of Bavaria, Franconia, and Suabia, as well as to every title taken from the said domains and territories; and reciprocally, all pretensions, actual or eventual, of the said states, to the charge of the house of Austria, or its princes are, and shall be for ever extinguished; nevertheless the renunciations contained in the present article do not concern the properties, which are by the 11th article or which shall be, by virtue of the 12th article above

conceded to their royal highnesses the archdukes named in the said articles.

XVI. The titles of the domains and archives, the plans and maps of the different countries, towns, and fortresses, ceded by the present treaty, shall be given up in the space of three months from the date of the exchange of the ratifications, to the persons that shall have acquired the property of them.

XVII. His majesty the emperor Napoleon guarantees the integrity of the empire of Austria, in the state in which it shall be in consequence of the present treaty of peace; as well as the integrity of the possessions of the princes of the house of Austria, pointed out in the 11th and 12th articles.

XVIII. The high contracting parties acknowledge the independence of the Helvetic republic, as established by the Act of Mediation, as well as the independence of the Batavian republic.

XIX. The prisoners of war made by France and her allies, from Austria, and by Austria from France and her allies, and who have not been yet restored, shall be restored within forty days from the date of the exchange of the ratifications of the present treaty.

XX. All commercial communications and relations are re-established in the two countries on the same footing as before the war.

XXI. His majesty the emperor of Germany and Austria, and his majesty the emperor of the French, king of Italy shall maintain between them the same ceremonial as to rank and etiquette as was observed before the present war.

XXII. Within five days from the exchange of the ratifications of the present treaty, the town of Presburg, and its environs, to the extent of six leagues, shall be evacuated. Ten days after the said exchange, the French, and the troops of the allies of France, shall evacuate Moravia, Bohemia, the Viertel, Unter Vienner, Wald, the Viettel Unter, Manhartsberg, Hungary, and the whole of Stiria. In the ten following days they shall evacuate the Viertel Vienner, Wald, and the Viertel Ober Manhartsberg; and finally, in the space of two months from the exchange of the ratifications, the French troops, and the troops of the allies of France, shall evacuate the whole of the heriditary states of his majesty the emperor of Germany and of Austria, with the exception of the place of Brannau, which shall remain for one month at the disposal of his majesty the emperor of the French, king of Italy, as a place of deport for the sick and for the artillery.

No requisition, of whatever nature, shall be made of the inhabitants during that month. But it is agreed that, at the expiration of the said month, no corps whatever of Austrian troops can be stationed or introduced within a circuit of six leagues around the said place of Brannau. It is in like manner agreed, that each of the places which are to be successively evacuated by the French troops within the times above mentioned, shall not be taken possession of by the Austrian troops till eight and forty hours after the evacuation. It is also agreed that the magazines left by the French army in the places which they shall successively evacuate, shall remain at its disposal; and that the high contracting parties shall make an arrangement relative to all contributions of war whatsoever imposed on the different hereditary states occupied by the French army; an arrangement in virtue of which, the raising the said contributions shall entirely cease from the day of the exchange of the ratifications. The French army shall draw its provisions and its sustenance from its own magazines, established on the routs by which it is to proceed.

XXIII. Immediately after the exchange of the ratification of the present treaty, commissaries shall be named on both sides to give up and to receive in the names of their respective sovereigns, all parts of the Venetian territory, not occupied by the troops of his majesty the emperor of the French and king of Italy. The city of Venice, the Lagunes, and the possessions of Terra Firma, shall be given up in the space of fifteen days; Venetian Istria, and Dalmatia, the mouths of the Cattaro, the Venetian Isles in the Adriatic, and all the places and forts which they contain, in the space of six weeks from the exchange of the ratifications. The respective commissaries will take care that the separation of the artillery belonging to the republic of Venice from the Austrian artillery be exactly made, the former being to remain entire to the kingdom of Italy. They will determine by a mutual agreement the kind and nature of the objects, which being the property of the emperor of Germany and of Austria, are consequently to remain at his disposal. They will agree either on the sale to the kingdom of Italy, of the objects above mentioned, or their exchange for an equivalent quantity of artillery or other objects of the same or a different nature, which shall have been left by the French armies in the hereditary states.

Every facility and every assistance shall be given to the Austrian troops, and to the civil and military administrations, to return into the Austrian states by the most convenient and sure ways, as well as to the conveyance of the imperial artillery, the naval and military magazines, and other objects which are not comprehended in the stipulations of sale or exchange which may be made.

XXIV. The ratifications of the present treaty shall be exchanged within the space of eight days, or sooner if possible.

Done and signed at Presburg the 26th December, 1805.

(Signed) CH. MAUR. TALLEYRAND. (L. S.)
JOHN, PRINCE OF LICHTENSTEIN. (L.S.)
IGNAG, COUNT DE GUYLAI.

We have approved, and do approve the above treaty, in all and each of its articles therein contained; we declare, that it is accepted, ratified, and confirmed; and we promise, that it shall be inviolaby observed. In faith of which, we have given these presents, signed with our hand, countersigned, and sealed with our imperial seal.

At the palace of Schoenbrun, 27th Dec. 1805.
By the Emperor, NAPOLEON.
The Minister Secretary of State, H. B. MARET.
The Minister of Foreign Relations,
CH. M. TALLEYRAND.

THE

No. IV. *Confederation of the Rhine, July* 1806.

THE new treaty of confederation signed at Paris, on the 12th of July, 1806, and exchanged at Munich on the 25th of the same month, consists of forty articles. The preamble states, that experience having shewn that the Germanic Constitution can give no kind of security for either internal or external peace to the south of Germany, the contracting parties to this treaty, viz. his majesty the emperor of the French on the one part, and on the other the kings of Bavaria and Wirtemberg, the elector arch-chancellor*, and the elector of Baden, the duke of Berg, the landgrave of Hesse Darmstadt, the princes of Nassau, Weilberg-Usingen, of Hohenzollern, Heekingen, Siezmaringen, of Salm Salm, and Salm Kirburg, of Isenburg Bristein, and of Lichtenstein, the duke of Ahrentberg, and the count of Leyn, have agreed to the following articles:—

Art. 1. The states of the above princes are for ever separated from the German political body, and united by a particular confederation, under the name of the Confederated States of the Rhine.

Art. 2. All the laws of the empire are abrogated and null with respect to these states.

Art. 3. Each of the contracting princes renounces all such titles as have a relation to the old constitution of the empire; and on the first of August ensuing they will formally declare their separation from the German empire.

Art. 4. The elector arch-chancellor receives the title of Prince Primate, and Most Eminent Highness; which, however, confers no prerogative inconsistent with the full sovereignty enjoyed by the other contracting parties.

Art. 5. The elector of Baden, the duke of Berg, and the landgrave of Hesse Darmstadt, take the title of Grand Dukes, and Royal Highnesses, and enjoy all the rights, prerogatives, and homage due to the regal dignity. Rank and precedence among them shall be according as they are named in the first article. The head of the house of Nassau shall take the title of Duke, and the count of Leyn that of Prince.

Art. 6. The common interests of the Confederate States shall be discussed in an assembly of the league or diet, the seat of which shall be at Frankfort, and the assembly shall be divided into two colleges, that of the kings, and that of the princes.

Art. 7. The members of this confederation shall be independent of any foreign power, nor enter into any kind of service, except with the states in the confederation.

Art. 8. No member shall alienate his sovereignty, either in whole or part, except in favour of a confederate.

Art. 9. All disputes which may arise between the members of the confederation shall be decided in the assembly of the league, at Frankfort.

Art. 10. The Prince Primate shall be president in the college of kings, and the duke of Nassau in that of the princes.

Art. 11. Within a month after the declaration has been made at Ratisbon, the Prince Primate of the confederation shall draw up a constitution statute, which shall determine the time when the assembly shall be convoked, and the objects and form of its deliberation.

Art. 12. The emperor Napoleon shall be declared protector of the alliance; and in quality of protector, whenever the Prince Primate dies, he shall appoint his successor.

The articles 13, &c. to 23 inclusive, stipulate the different cessions and acquisitions of the confederates. Thus Nassau cedes to Berg the town of Deuss and its territory. Bavaria acquires the imperial city of Nuremberg and its territory, and the Prince Primate the imperial city of Frankfort.

Art. 24. The members of the confederation reduce and include under their sovereignty all the princes, counts, and lords within the circle of the allied territory. [Then follows a detail of the division, by which several of the more considerable principalities are divided among two, three, or more new sovereigns; as for example, the territories of Hohenlohe between Bavaria and Wurtemberg; those of Saxis among three, and those of Furstenburg among four different sovereigns.]

Art. 26. Defines the rights of sovereignty, legislation, judicial authority, the police, military conscription, and imposts.

Art. 27. The subjected princes and counts shall retain their domains, seignoral rights, &c.

The 35th article stipulates, that there shall be an alliance between the emperor of the French and the Confederated States, by virtue of which every continental war in which either of the two parties shall be engaged, shall be common to both.

Art. 36. Should a foreign or neighbouring power arm, the contracting parties shall likewise arm, to prevent surprise. The notification for such array shall be made by the emperor Napoleon. The contingent of the allies shall be divided into four parts, and the assembly of the league shall determine how many of those parts shall be put in motion.

Art. 37. Bavaria engages to fortify the cities of Augsburgh and Lindau, and to make them depots of artillery, arms, ammunition, and provisions.

Art. 38. The contingent of the several allied powers shall be as follows:—France, 200,000 men; Bavaria, 30,000; Wurtemberg, 12,000; Baden, 8000; Berg, 5,000; Darmstadt, 40,000; Nassau Hohenzollern, and others, 4000.

* The Archbishop of Ratisbon.

Art.

Art. 39. The contracting parties will admit other German princes and states into the alliance, when it shall be found suitable to the common interest.

Art. 40. The ratification of this treaty shall be exchanged at Munich on the 25th of July.

Signed by the Plenipotentiaries of the
Paris, July 12, 1806. Contracting Parties.

The instrument of the act of ratification was signed by the emperor at St. Cloud, on the 19th of July, and countersigned by the minister Talleyrand and the secretary of State.

Hessia is said to have since joined the alliance with a contingent of more than 20,000 men.

It is said to be understood that the minor states shall abandon the rights of sovereignty, such as a mint, the raising of troops, &c. It is added, that a similar confederation is formed on the north of the Meyn, by the king of Prussia, which should of course include Hessia, and the accession of this power to the southern league has not been confirmed, and may be only temporary. Thus the division will correspond with that foretold in the first edition of this work, save only with the unfortunate loss of the Austrian influence, which, to the lasting destruction of all balance of power, has been transferred to France.

No. V. *Remarks on the Russian and Spanish pronunciation*, &c. *

THE confusion so frequently met with in books and maps, from the mode of expressing Russian proper names, arises principally, if not entirely, when otherwise any degree of accuracy is attended to, from this circumstance:—the Germans render the third letter of the Russian alphabet *vedi*, which is precisely the Latin or English *v*†, by their *w*, as having the same sound; pronouncing *was wollen wie*, as we should *vas vollen vie*; and accordingly, on their first coming to England, they naturally say *vat vould ve*, instead of *what would we*. Now is it well known that most of the maps and books concerning the geography or history of Russia, used in France and England, are translated from the German; in which the translators, adhering strictly to the letter of *their* original, render the words, especially in our language (for the French having no *w* may give it what sound they please), totally different. What a different sound, for instance, in English have *Mohilew*, *Tambow*, *Tschernigow*, *Charkow*, *Okzakow*, *Saratow*, *Kiow*, *Wolga*, *Newa*, *Newski*, *Orlow*, *Dashkow*, &c. from *Mohilef*, *Tambof*, *Chernigof*, *Kharkof*, *Otchacof*, *Saratof*, *Kief*, *Volga*, *Neva*, *Nefski*, *Orlof*, *Dashkof*, &c. as they are spelt and pronounced in Russian. The Rev. Mr. Smirnove prefers rendering this termination by *ove*, *Tambove*, *Chernigove*, *Dashkove*, *Orlove*, &c.; and his opinion ought to have great weight, as that of a gentleman, acquainted with both languages. However the difference between us is nearly if not quite none at all: and I adopted the *of* after the Rev. Mr. Coxe, and many other respectable names, only for the sake of simplification, and because to my ear it is the better English termination of the two. At any rate the totally different German orthography ought to be for ever exploded from all English maps and writings—The Polish and Hungarian *c* and *z*, copied by the Germans, have likewise, in an inferior degree, added to the perplexities; *czar* for *tzar*, *Czernichew*, for *Chernichef*, *czarowitz* for *tzarevitch*, *Petrowitz* for *Petrovitch*, &c.

The following are a few geographical terms:

Ocean—*Okeäne.*

Sea—*Morè; Tikoë morè*, the peaceable or Pacific sea,
Tschernoë morè, the black sea.
Sredizemnie morè, the midland sea, Mediterranean.

Lake—*Ozero; Bielo ozero*, the white sea; *Ladogskoi ozero*, the Ladoga lake.

Cape or promontory—*Noss*, signifying likewise the nose; as does the *Nase* of Norway.

Strait—*Prolife; Veygatskoi proliva*, Veigat's straits.

Gulf—*Zalife;* } *Zaliva Phinskago*, the gulph of
Bay—*Zalife;* } Finland. Only one word for
Creek—*Zalife;* } them all.

River—*Reka.*

Mountain—*Gora.*

Hill—*Gorka*, the diminutive of *Gora.*

Valley—*Dolina.*

Forest—*Less* (pron. *Lyess*),

Desart—*Puslyi.*

Plain—*Dolina:* also *Rovnina*, and *Glade.*

Peninsula—*Poluostrof.*

Island—*Ostrof.*

Rock—*Kamen.*

City—*Gorod; Novgorod*, New city; *Staragorod*, or *Bohem Stargard*, Old city.

Town—*Gorodok*, the diminutive of the foregoing.

Nation or country—*Narode.*

Native country—*Rodina* or *Otécheslvo.*

Region—*Strana.*

Kingdom—*Korolevslo.*

King—*Korol.*

Climate—*Klimatt* (evidently borrowed.)

Earth—*Zemla*, (pron. *Zeml ya*,) *Novazemla*, New earth; like Newfoundland.

World—*Svet*, (pron. *Sv. yet.*)

Province—*Provintzia*, or *Guberniya.*

Territory; district—*Uyesd; oblast.*

* For those on the Russian the author is indebted to the Rev. Mr. Tooke.

† Or *f* in the word *of*, e. g. coat of arms; man of war, &c. where the *f* is neither more nor less than a *v*.

Isthmus—*Istm*, also *perescheek*.
Sound—*Sund: Nutka-sund.*
Volcano—*Ogneduischutschaia gora*, (burning mountain.)
Whirlpool—*Puchina.*
Haven—*Gavane.*
Port— } The same.
Harbour— }

From Mr. Tooke's information it likewise appears, that the common termination *skoy* is merely an adjective possessive or appellative; as *Finskoy*, Finnish; *Imperatorskoy*, Imperial, &c.: So the Aluetskoi, the Aleutian islands, &c.

A few remarks may also be offered on the Spanish pronunciation, from Dobrizhoffer and others.

Ch is pronounced as the German *tsch* (or *ch* in our church;) so *mucho*, *Chili*, are *mutscho*, *Tschili*.

X and *J* are sounded gutturally like *h*; as *mujer*, *muher*; *jamas*, *hamas*; *Ximenez*, *Himenez*. In the sound of *x* our author seems to err, for it was uniformly put by the Spanish in expressing foreign words, as *sh*; thus *Xah* is *Shah*; *Xoa* is *Shoa*; *Xerez* is *Sherez*, &c. &c. The sound of *x* as a mere *h* seems a provincialism, or a recent affectation. *G* before *e* or *i*, is sounded as *j* or *h*.

ç is precisely equal to *z*.
Ll as *li*; thus *colmilo*, *colmilio*.
n as *gn* in French; *Espana*; *Espannia*.
qu as *k*.

Link, and his ingenious translator, present some remarks on the Portuguese pronunciation. The Portuguese do not use the *i* after *t*, &c. as *tierra*, *terra*. The *ch* is pronounced as in French; and both the *j* and the *x* like the French *j*. The final *ao* is sounded *aung*; and the final *m*, which is frequent, like *ng*. The *n* between two vowels is changed to *nh*; thus *vino* becomes *vinho*, pronounced *veenyo*. The Portuguese is averse to the *l*; hence the articles *lo*, *la*, become simply *o*, *a*, this *o* being pronounced as *u*.

No. VI. *Value of Coins used in common Calculations.*

	French Money. Frs.	Cents.	*Sterling.* £.	s.	d.
A Florin of Germany, -	2	20	0	1	10
——— Austria, -	2	65	0	2	2
Rix Dollar of Prussia, -	4	—	0	3	4
Dollar of N. America, -	5	40	0	4	6
Guinea of England, -	25	—	1	1	0
Rix Dollar of Denmark,	5	70	0	4	9
Piastre of Spain, -	5	30	0	4	0
Florin of Holland, -	2	20	0	1	10
Lire of Italy, -	—	85	0	0	8½

	French Money. Frs.	Cents.	*Sterling.* ℒ.	s.	d.
A Scudi of Rome, -	5	53	0	4	7
Ducat of Naples*, -	4	30	0	3	7
Rouble of Russia, -	4	5	0	3	4½
Rix Dollar of Sweden,	5	80	0	4	10

The common large tables of Coins are not only uselessly prolix, by including those never mentioned in books of history or travels, but present many antiquated names and values, and are in other respects often grossly erroneous.

No. VII. *Extracts concerning the Chinese War in Little Bucharia, 1755 to 1759.*

From the Histoire Generale de la Chine. tome xi. Paris 1780, 4to. p. 550, &c. *This Work being rare and expensive, the following brief Summary of that remarkable War, which so much enlarged the Chinese Empire, may be acceptable, especially as it presents every Circumstance which can illustrate the obscure Geography of an interesting Country.* (See page 564.)

SINCE the accession of the present, or Mandshur, dynasty, the chief wars of the Chinese have been with those Moguls called Kalkas, who dwell towards the rivers Kerlon and Tula. These tribes being at length subdued, and the family of the Kaldan, or sovereign, extinguished or forgotten, a new vicinity produced, as usual, a new enmity, and the Chinese arms were directed more to the west. The throne of the Eluts was contested by Debatchi, (called by the Chinese Taoua-tsi,) and by another chief named Amoursana. The latter was forced to withdraw, and seek refuge in the Chinese court at Geho. The kings of the Eluts used to reside on the river Ili, where a city has since been built by the Chinese; and though chosen as a place of exile, was greatly increasing in population.

Kien-Long, the Chinese emperor, wished to avoid a distant and expensive war against the Kalmuks of Soongaria, also called Eluts by the Chinese, but being irritated by the disrespectful conduct of Debatchi, he undertook this war in opposition to the advice of all his councils. In the beginning of 1755 Amoursana pro-

* A German ducat is about 9*s.* 4*d.*; the dollar 4*s.* 8*d.*

ceeded

ceeded at the head of a Chinese army against Debatchi, who was taken prisoner, and sent to the court of Pekin, where he soon after died. Amoursana was named king of the Eluts or Kalmuks under the protection of China; but speedily revolting, he attacked the Chinese stations on the Ili, destroyed the forts and redoubts, and having slain the two Chinese generals Panti and Aiongan, he pitched his camp before Palikoun, one of the chief towns of the Eluts, which was strongly garrisoned by the Chinese. This town is probably the Bulugan of the Russian maps, about 60 miles N. W. from the lake Barkol.

Other Chinese generals were equally unfortunate; but the garrison of Bărkol was reinforced, and checked the progress of the enemy. This seems clearly to be the town of Barkol, or Ortic, on the east of the lake of Barkol. At length, in 1757, the emperor was fortunate in appointing a general of real skill, named Tchao-hoei, and the dissensions of the Kalmuks contributed to their destruction. The Chinese lieutenant-general Fouté, was also a man of distinguished courage and enterprise: and Amoursana was soon forced to retire into Siberia, where he died. Numbers of the Kalmuks took refuge among the Pourouts or Buruts, a part of the Kirguses; others among the Tanguts towards Tibet, and among the Torguts or more western Kalmuks. Kien-Long divided the country of the Eluts among several chieftains, who were bound to the court by homage and titles.

The country of Little Bucharia, styled by the Chinese Hoa men, or Hoei-pou, that is, *the hord of Mahometans*, had been subject to the Kalmuks of Soongaria. During the course of the war, the Mahometan chiefs of Yerquen, or Yarcand, and Hashar, or Cashgar (princes called by the Chinese the Greater and the Lesser Ho-tchom,) ungrateful for favours received from Kien Long, had slain a Chinese officer and 100 cavalry. The Chinese general, Tchao-hoei, advanced against the Ho-tchoms, who being defeated retired to Yerquen, which surrendered; and was speedily followed by Hashar. "Besides Hashar and Yerquen, they likewise became masters of seventeen other towns large and small, and of 16,000 villages or hamlets. In the district of Hashar were reckoned about 60,000 families; without comprising those who had followed the rebels, and about 12,500 people, exiles in the country on the Ili. Hashar was little more than ten *li* (probably of 250 to the degree) in circuit, and only contained 2500 families. To the east of Hashar were situated Ouchei and Akson. Between this last town and Hashar were three towns, Poisonpat-hotchil, Poï-inké, Entorché; and two large villages, Peserguen and Arvouat, inhabited by about 6000 families. To the west of Hashar were the Buruts of Ertchi-yen (probably Adjian); and between the two, the towns of Paha-ertouché, Opil, Tajamelik; and the villages of Saïram and Tokousak, which however were only computed at 2200 families. To the south of Hashar, before arriving at Yerquen, are situated two towns, Inkatsar-han Kalik; and two hamlets, Tosohoun and Kavalkar: the four containing about 4400 families. Finally, to the north of Hashar, are the Buruts, properly so called, to whose country one passes by the town of Arkoui, and the village of Horhan, which may contain nearly 800 families, On a general computation, the Mahometans depending on Hashar were about 16,000 families, estimated at 1,000,000 heads, as is proved by the public registers."

There were fifteen degrees of magistracy; among which the chief was that of Akim or governor of the city; his lieutenant the Hichehan; the Hatsee, or judge of criminal affairs; and the Marab, or collector of the taxes. The letter of Tchao-hoei to the emperor, 19th September 1759, presents further particulars. Chinese garrisons were established even in small posts, as Opil, Tajamelik, Tchik, Entorché, and Païsoupath.

Meanwhile Fouté pursued the fugitive Ho-tchoms, or Mahometan chieftains, whom he defeated at Atchour, whence they fled towards Badakshan, and arrived at Poulok-kol. Fouté continued the pursuit to the great range of mountains (Belur Tag); and learnt from a native that the enemy had passed, and arrived near Badakshan, and had still a very high mountain to ascend, situated between two lakes, that on the one side being called Poloun-kol, and that on the other side Ifil-kol. Beyond the former is a high mountain, whence Balakshan may be descried. Fouté pursued the Mahometans again, defeated them amidst the mountains, and summoned the governor of Badakshan to surrender the Mahometan princes. One had died in battle, but the head of the other was sent to Pekin; and the Chinese general retired satisfied with his success *.

Position of the chief Places subject to the Eluts of Kalmuks; the Longitude computed from the Meridian of Pekin. (Ib. xi. 575.)

	Latitudes. Deg. Min.	*Longitudes.* Deg. Min.		*Latitudes.* Deg. Min.	*Longitudes.* Deg. Min.
Kou-tché, - -	41 37	33 32	Païsoupath - - -	41 41	35 12
Pou-kou-aulh, -	41 44	32 7	Ouchei, - -	40 6	38 27
Chaiar, - -	41 5	33 21	Gaoché, - -	40 19	42 50
Cou ko-pou-yn, -	41 20	33 40	Pesch-karam, or Poche kolmou,	39 20	42 10
Aksou, - -	41 9	37 15	Hashar, - -	39 25	42 25
Saïlim, - -	41 41	34 40	Ingazar (Inkesal) -	38 47	41 50

* The reign of Kien-Long is here continued till 1780, but there is no hint of his having visited Badakshan, a reported but most improbable circumstance.

	Latitude. Deg. Min.	Longitude. Deg. Min.		Latitude. Deg. Min.	Longitude. Deg. Min.
Tajamelik,	39 6	42 53	Také,	36 13	33 45
Yerquen,	38 19	40 10	Kelia,	37 —	33 33
Oulelek,	37 41	39 48	Antchiyen,	41 28	44 35
Chatou,	37 43	39 30	Isitalchan,	41 48	45 6
Harhalik,	37 41	39 15	Marhalan,	41 24	45 10
Selekoueulh,	37 48	42 24	Namkan,	41 38	45 40
Koukiar,	37 7	39 2	Haohan,	41 23	45 56
Santchou,	36 58	37 47	Altoubei,	41 33	48 10
Tououa,	36 52	37 7	Tachekan,	43 3	47 33
Paltchouk,	39 15	39 35	Badakchan,	36 23	43 50
Peichéniya,	36 26	35 53	Chekonan,	36 47	44 46
Ilitchi,	37 —	35 52	Gaolochan,	36 49	45 26
Halahaché,	37 10	36 14	Ouahan,	38 —	45 0
Yulongaché,	36 52	35 37	Poloeulh,	37 —	43 38
Tchila,	36 47	34 42	Hatchouté,	37 11	42 32

No. VIII. *Construction of the Southern Mountains of Hindostan.*

[Communicated by Dr. Buchanan.]

The most common rocks in *Karnata*, that is to say in the country above the *Ghats*, belonging to the British and their ally the *Raja* of *Mysore*, are various granites and gneisses with other aggregate stones, disposed in vertical strata, and much intersected by veins of quartz and of felspar. Some of these veins are of great thickness. The granites are of great variety, and some of them and of the porpheries are very beautiful, afford large masses for building, and take an elegant polish. Iron shot quartz and hornstone are very common; as is also shistoze mica, most beautiful specimens of which may be procured on the *Kari-ghat* hill which overlooks Seringapatam. Hornblende and pot-stone, with a variety of rocks of an intermediate nature, are also common, and afford excellent materials for building. Of the first have been formed the highly polished columns by which Hyder's tomb is supported. In almost every part of the country are found in the soil sporadic calcareous concretions, which in some fields are very abundant, and supply the inhabitants with lime.

Draveda or the country between the Eastern *Ghats* and Madras consists nearly of the same materials with those above mentioned; but the most common aggregate rock is one composed I imagine of small masses of arid and fat quartz united. Some suppose that what I have called arid quartz is felspar in a state of decay: the stone however is excessively hard, and an excellent material for building, although it does not admit of a marble polish.

In the province of Coimbetore the same vertical rocks form the basis of the country; but in many parts they are covered entirely by a calcareous *stratum*, which in its nature and appearance entirely resembles the sporadic concretions found to the northward; and these also are common in Coimbetore. That it is a tufa, or deposition from water, I have no doubt, having found it marked by the impression of leaves of trees, and also united with small fragments of the primitive rocks so as to resemble the cement formed of lime and small gravel.

The maritime regions between the sea and the western mountains from Pali-ghat to Goa, and probably stil farther north and south, has for its basis a solid grey granite without veins of quartz. Towards the north I observed intermixed with this granite rock of talcoze argilite and hornblende slate. The most remarkable stratum in this part of the country lies over the primitive rock, and by the natives is called Brick-stone. It is an indurated clay containing much oxyde of iron. While in the stratum, and covered by the soil, it is so soft that it can readily be cut with any iron instrument, such as a knife, and is easily raised in masses with a pick-ax, after which it is cut with a trowel into pieces fit for building, which by exposure to the air become equal in hardness to the best bricks, and are used in all buildings, even such as are under water, as a most durable and excellent material. The parts of this stratum that are exposed to the air assume the appearance of a black rock, containing numerous small cavities as if it had undergone the action of fire, and which is extremely sterile.

Iron ore abounds in almost every part of the south of India: the most common is in the form of black sand, which is found pure in the channels of torrents, or is procured by washing it from beds of clay with which it is intermixed.

Height of the Mountains of Butan or Tibet.

By Colonel Crawford's observations, taken with great care near Patna, the highest peak of Himala then within view is more than twenty thousand feet above the plain of Nipal, which is probably five thousand feet above the sea.

*** In the Hindoo chronology mention is made by Sir W. Jones, of Billions, &c. of years. Dr. Johnson having given no explanation, the following may not be unnecessary.

Trillions.	Billions.	Millions.	Units.
222,222,	222,222,	222,222,	222,222,

By a Billion is meant, in short, what is otherwise called a Million of Millions; and by a Trillion, is meant a Million of Millions of Millions. And the like is to be understood of Quadrillions, Quintillions, Sextillions, &c. *Wells's Arithm.* 1723, 8vo. p. 8, 10.

No. IX. *Revenues*, &c. *of Hindostan.*

An estimate of the probable Amount of the Revenues and Charges in India, for the year 1805-6; together with the Amount of the Commercial Charges not added to the Invoices, the interest on the Debts, and the Supplies to Bencoolen, Prince of Wales Island, and St. Helena.

From the accompts presented to the House of Commons and printed by their order June 1806.

Revenues:

Bengal: at 2s. the Current Rupee:		
Mint Post Office, Stamps, and Judicial Fees	£ 197,200	
Ceded Provinces in Oude - -	1,786,400	
Conquered Provinces - -	614,800	
Land, &c. Revenues of Bengal, Bahar, &c.	3,630,800	
Customs - - -	352,060	
Salt Sales - - -	1,474,360	
Opium, Do. - - -	707,600	
		8,763,220
Madras: at 8s. the Pagoda:		
Post Office, Farms, and Licences, Judicial Fees	£ 92,382	
Revenues and Customs of the Carnatic -	1,233,628	
Do. and Do. Tanjore -	452,398	
Do. and Do. of Cessions by the Nizam	670,460	
Do and Do. of possessions before 1790	1,086,255	
Do. and Do. of Mysore, Malabar, Canara, &c	1,239,173	
		4,774,296
Bombay: at 2s. 3d. the Rupee:		
Revenues and Customs of former possessions	330,188	
Do. Do. of late Acquisitions	411,829	
		742,017
Total estimated Revenues,		£. 14,279,533

Charges:

Bengal.	Civil Revenue, Judicial, &c.	3,402,814	
	Military, including Fortifications	4,012,556	
			7,415,370
	Carried forward		7,415,370.

Brought

	Brought forward		7,415,370
Madras.	Civil Revenue, Judicial, &c.	1,751,433	
	Military, including Fortifications	3,898,749	
			5,650,182
Bombay.	Civil Revenue, Judicial, &c.	519,473	
	Military, including Fortifications	1,060,819	
			1,580,292
	Total estimated Charges		£ 14,645,844

Commercial Charges not added to Invoices:

Bengal	£ 104,388	
Madras	77,924	
Bombay	17,494	
		199,806

Interest on Debts:

Bengal	£ 1,153,040	
Madras	400,000	
Bombay	270,000	
		1,823,040
Total estimated Charges and Interest,		16,668,690
Supplies from Bengal to Prince of Wales Island, Fort Marlbro' and St. Helena		266,800
		16,935,490
Deduct estimated Revenues,		14,279,533
Estimated Deficiency,		2,655,957

East India House, 3d June, 1806. (Errors excepted.)

WM. WRIGHT,
Auditor of India Accompts.

An Accompt shewing the Annual Amount of Bullion, Stores and Merchandise, respectively exported by and for the Service of the East India Company, to India, from the Year ending the 1st March 1793 to the 1st March 1804; together with the Expenditure and Sales thereof at each Presidency, and the respective Balances in store and afloat, on the 30th April 1793, and the 30th April 1803; as far as the same can be made out.

Exported from 1st March 1793 to 1st March 1804.

	Merchandise.	*Stores.*	*Bullion.*	*Total.*
From 1st March 1793 to 1st March 1794	278,644	236,456	10,246	525,346
—— 1st March 1794 to 1st March 1795	133,411	80,194	——	213,605
—— 1st March 1795 to 1st March 1796	266,811	159,580	——	426,391
—— 1st March 1796 to 1st March 1797	629,264	247,843	——	877,107
—— 1st March 1797 to 1st March 1798	677,573	164,229	20,680	862,482
—— 1st March 1798 to 1st March 1799	309,557	267,945	*720,368	1,297,870
—— 1st March 1799 to 1st March 1800	463,578	330,204	318,611	1,112,393
Carried forward				

* What is the cause of this extraordinary increase of Bullion exported.

	Merchandise.	*Stores.*	*Bullion.*	*Total.*
Brought forward				
From 1st March 1800 to 1st March 1801	471,630	520,597	220,920	1,213,147
—— 1st March 1801 to 1st March 1802	792,627	316,065	535 879	1,644,571
—— 1st March 1802 to 1st March 1803	416,216	423,214	572,131	1,411,561
—— 1st March 1803 to 1st March 1804	605,649	380,326	852,207	1,838,182
£	5,044,960	3,126,653	3,251,042	11,422,655

East India House,
3d June, 1806

(Errors excepted.)

CHAS. CARTWRIGHT,
Accomptant General.

An Accompt shewing the Annual Amount of Bullion, Stores, and Merchandise, respectively exported by and for the Service of the East India Company, to China; from the Year ending the 1st March 1793 to the 1st March 1804:

	Bullion.	*Stores.*	*Merchandise.*	*Total.*
From 1st March 1793 to 1st March 1794	——	586	639,574	640,160
—— 1st March 1794 to 1st March 1795	——	949	795,914	796,863
—— 1st March 1795 to 1st March 1796	——	513	819,965	820,478
—— 1st March 1796 to 1st March 1797	38,302	506	823,931	862,739
—— 1st March 1797 to 1st March 1798	303,859	1,741	460,495	766,095
—— 1st March 1798 to 1st March 1799	309,206	1,349	506,500	817,055
—— 1st March 1799 to 1st March 1800	502,967	1,441	880,496	1,384,904
—— 1st March 1800 to 1st March 1801	140,734	11,258	912,237	1,064,229
—— 1st March 1801 to 1st March 1802	——	12,281	1,364,005	1,376,286
—— 1st March 1802 to 1st March 1803	——	8,078	838,633	846,711
—— 1st March 1803 to 1st March 1804	570,963	4,376	1,494,155	2,069,494
£	1,866,031	43,078	9,535,905	11,445,014

East India House
3d June, 1806.

(Errors excepted.)

CHAS. CARTWRIGHT,
Accomptant General.

END OF THE FIRST VOLUME.

Strahan and Preston,
Printers-Street, London.

SUPPLEMENT TO VOL. I.

CONTAINING

CORRECTIONS AND ADDITIONS.

1817.

PROEME.

THE recent great changes in Europe, and its final re-establishment by various treaties, and above all, by the Act of the Congress of Vienna, have rendered several alterations in this Work necessary, to accommodate it to the present positions and policy.

The geographical discoveries and improvements during six years, have not been so important as might have been expected in an age of science and adventure. The chief are the examination of the sources of the Ganges, and the height of the mountains on the north of Hindostan, far superior to that of the Andes, hitherto esteemed the highest on the globe. Both these discoveries were predicted in the first edition of this Work, a circumstance which gives the author more confidence in regard to some other topics, as the non-existence of Baffin's Bay, and others of equal moment.

Among others more minute may be mentioned the height of the Sierra Nevada, in the south of Spain, unexpectedly found to surpass the Pyrenées; the Peak of Mulhacen being 10,944 feet above the ocean, that of Veleta 10,686; while Mont Perdu, the highest of the Pyrenées, is only 10,578. The operation was conducted by Roxas, a skilful surveyor, both by the barometer and by a geometrical level extended from the shores of the Mediterranean.

It is unnecessary to mention other improvements in various objects of this science, such as the mensuration of the height of plains and even vallies above the level of the ocean, (some plains being higher than the mountains in other regions,) an estimation necessary to ascertain striking variations of climate under the same latitude.

But among the advantages of this impression, must not be forgotten the new extent allotted to the boundaries of Europe towards the south-east; limits founded on the grand characteristic features of nature, while the former were too minute, ideal and imaginary even to divide provinces, for some Russian provinces embraced fragments of Europe and Asia. *

The account of the progress of English commerce has been enriched by curious and interesting documents of the thirteenth and two following centuries, which form an important addition to our topography, and present as it were a new Domesday book, to estimate the state of pasture and that of the wool trade (our great first staple) in most counties of the kingdom, with a part of Scotland and Wales.

Among the chief deficiencies, the central parts of Asia and Africa remain unexplored, though both objects might be accomplished by employing Jelabs, or travelling merchants, chosen among our Mahometan subjects in Hindostan.

The defects in the geography of Eastern Persia have been imperfectly supplied by the journey to Cabul from Hindostan; but the route of real observation was confined, and conjecture ill supplies the rest. Mr. Browne's intention (suggested unfortunately by the author) was to have visited all the east of Persia, and to have returned by Samarcand to Russia. Four years were to have been allotted to this important journey. With the deepest grief the author pays this last tribute to his memory, as he was assassinated immediately after leaving the Persian camp on the south of the Caspian, at the very commencement of the scene of observation! An intimate acquaintance of

* These new boundaries are easily depicted on the common maps. In Europe, Spitzbergen and the Azores, which pass the scale, should be inserted in separate squares on the west side, where there is always a wide vacancy.

more than twenty years (with occasional correspondence from Egypt and the East) may give weight to the eulogy that he was a man of most extraordinary endowments and acquirements, accompanied by exquisite modesty and oriental gravity; and such honesty and veracity, that if life itself had been at hazard, never would the slightest deviation from truth have been employed. He was, in a word, an English gentleman of the old rock. *

This Proeme (for preface would be too solemn a word for a supplement) must not be closed without warning the reader, especially if a foreigner, that the author never took any part whatever in any translation of this work, and he must protest before the literary court of all Europe, against the very strange and unwarrantable French translation of one or two volumes, (the rest having happily never appeared,) and French Abridgment, both published at Paris in 1811. He had never even seen either till he arrived at Paris in 1815, nor did he think them worth reading till he was desired to prepare this Supplement.

He cannot sufficiently express his surprise and contempt, when he found his work, written throughout in an English sense and spirit, though liberal it is trusted to all nations, metamorphosed into a beast with seven heads and ten horns, and bearing seven diadems† ; without a metaphor, into a manifesto for the *great empire*, consisting, as has been observed, of very small heads. Happily this disgrace was in some sort remedied by another ; for the very modest translator, on account of some useless alterations, had advanced his name on a par as conjunct with the author, so that instead of sharing the praise, he becomes in fact responsible for all the blame. This took place at a period when the large Atlas, superintended by the author, was gradually publishing at London 1808 — 1815, in which the French conquests and arrangements were passed over without any notice whatever.

The tyrannic authority of the French government at the time, may apologize for this violation ; but why alter the whole arrangement of the European states ?‡ It would have been preferable to have omitted the author's name entirely,

Miserum est aliorum incumbere famæ,

rather than to have dismembered and disfigured his work, and what is more, to have placed his name in such a conjunct and unusual way, as to render him suspected of a connivance, at least with such violations of all literary propriety and integrity. But this was at a time when a military despotism oppressed real talents, always modest and strangers to intrigue, (as robbers naturally abhor lanthorns,) and when quackery prevailed in all departments, in literature, in the arts, in diplomacy, in government, nay, in conquests and in victory. Truth and honesty were the only crimes. The reigning principle of robbery was also extended to literature ; the lucky plagiarist of an old play was rewarded with a seat in the Institute ; while another was obtained by the translator of this Work, though his other literary productions had escaped the public notice, as if his arrogant assumption of my labours could be a solid foundation of literary reputation. It is to be hoped that the new order of things will produce legitimate exertions and legitimate fame.

It is easy to make additions, —*facile est inventis addere ;* but if any real improvements had appeared in these French translations, they would willingly and gratefully have been adopted. On the contrary, the variations are highly objectionable, and only serve to confirm my confidence in the original plan, which the French translator has not even understood when he adds Islands as a fifth chapter, while, in the original, they only form an appendage to ch. iv. Natural Geography, the former three being Historical, Political, and Civil.§ So that he has mistaken the basket of the stage-coach for one of the fore-wheels.

The other chief objections are : 1. The second part

* A metaphor borrowed from the purest gems. A valuable friend of both, Mr. Tennant, eminent in chemistry, perished at Boulogne in Feb. 1815, by the sinking of a drawbridge, on which he was passing on horseback. He was another excellent character. Often have Mr. Browne's gravity, and Mr. Tennant's absence of mind, relaxed with the author over a glass of Shiraz wine, the precious gift of a Persian ambassador to our distinguished chemist.

† France, Rome, Naples, Spain, Holland, Westphalia, Sweden. An odd coincidence.

‡ See the French Abridgment 1811, 2 thick vols. 8vo. The editor informs us p. iv. that the first edition of the *Abrégé* was by M. l'Ecuy, formerly abbot of Prémontré, afterwards chaplain and almoner to the king and queen of Spain, known by several good literary works. The second edition was directed by M. Godart ; but the most valuable additions are by the celebrated Latreille, versed in many sciences besides entomology. Is this edition, 1811, the third or the fourth ?

I felicitate him on the materials which were not in my power ; — they must be very important, as his work proves ! In the German, I had from the first the assistance of Dr. Willich, and afterwards of two other translators. (See Russia, &c.) Among other deceptions in that extravagant preface, it is stated that Galanti translated from the French, while he translates from the English ; and in one of his prefaces, expressly and formally rejects the interpolations and notes of the French editor, who is even so bold as to assert that I had adopted almost all his additions, while I only took from compliment a few notes which might be effaced without any sensible loss. An old poet of his own country well expresses himself on such an occasion.

" Les censeurs jusques au tombeau,
Ne cessent jamais de mesdire ;
Mais tel mouchera ce flambeau,
Qui n'en sçauroit fournir la cire."

The success of an original system by him (Pref. p. ii.) has since been tried. In justice to himself and the public, he published a volume of plagiarisms, called *Cosmologie*, 1815, which fell into oblivion with his other works. That preface is a singular specimen of French *fanfaronade* under Bonaparte ; and the whole work, a great literary curiosity.

§ Galanti, on the contrary, has seized the spirit of the plan, and rejects the French additions. " Pinkerton è il primo tra i moderni scrittori di Geografia che abbia afferrato il gran segreto che caratterizza le opere degli Antichi dir tutto ed esser breve. L'opera è scritto con gusto, con critica, con interesse, e con uno stile che non fa torto al soggetto. *Ma il metodo n'è forse la parte più luminosa. Gli oggetti si numerosi e si varii di questa scienza classificati, come sono da lui, e presentati in ciascuno de' loro rapporti sotto lo stesso punto di veduta, richiamano l'attenzione, eccitano l'interesse, colpiscono e fanno impressione.*" Pref. Tom. I.

of

of the Introduction by M. la Croix, called Physical, is as bad as the first is excellent. The physical is, in fact, included in this Geography, which he neither mentions nor appears to have read. His physics (mathematics are his peculiar province) are dry, antiquated, unscientific, and uninteresting. 2. The four capital improvements by M. Walckenaer * are mere deteriorations, interpolated by his usual want of taste and judgment. A dry *list* of *maps* can never enter into historical geography, as it cannot admit either dignity or elegance, and can only be placed in an appendix. The *languages* form a profound and peculiar study, little connected with geography. Some ancients describe the *sea-shores*, because they give no maps: the subject is as barren as their sands. The *principal* or *remarkable places* were omitted, because they were neither one nor t'other; nor must the memory be overcharged, as these trifling additions distract the attention from the main objects, in opposition to the original plan. His want of judgment and taste is, if possible, still more apparent in his adoption of the barbarous and unscientific *Oceanique*, instead of the elegant and judicious Australasia and Polynesia suggested by De Brosses about 1760, and since adopted by a hundred writers of all nations, not only on geography, but on mineralogy, geology, botany, zoology, &c. This innovation was, therefore, as impudent as imprudent; but perhaps the *Oceanique* was to form a part of the *grand empire*, and was only a new name of a department.

In the French abridgment, 1811, some gross faults and deceptions have been already indicated. At the end of the second volume are no less than eighteen pages of *errata*, (which, however, I shall double when the translators chuse,) in a book designed for education, and even adopted in academies and universities! Common sense dictated that the leaves should have been cancelled.

After these prefatory observations, it is now time to pass to the necessary additions and corrections. The author regrets that he is constrained to begin them with another defence of his Work, but we are unhappily in an age of military rapine and literary plagiarism, and both accompanied with such insolent empiricism, that the modesty of science becomes furious from oppression, and is forced to combat, however unwillingly, with similar weapons, as he who only wears a sword is no match against an assassin who adds a dagger and pistols.

P. xvi. It is a well-known maxim of ancient and modern times, that only one occasion can vindicate a man's praise of his own efforts, and that is the law of nature, self-defence. The envy and jealousy that attend all professions, as Hesiod has long ago remarked, are unhappily too common in literature. Abuse and libels of all kinds had been heaped upon the author of this work, both by French and British journalists, so dangerous it is to have no party but truth! The former conducted by a democrat, who, with an audacity in plagiarism that passes all former example, had published as his own the greater part of this Geography. The simple defence was the publication of a pamphlet, in which some few of the plagiarisms were printed in lateral columns, from which it appeared that dozens of pages were copied word for word. That pamphlet, *Moyen de parvenir en literature*†, was besides written with such bright wit and keen satire, that this new pretender became, as Shakspeare says, "a dried pear," and was laughed into non-existence. The plan was certainly *new*, as he says in his title (in puerile rivalry), and a further novelty was the division of a system of geography into more than a *hundred books*, while Strabo was content with *fifteen*. These books are mere chapters, compiled with phlegmatic prolixity, without one shadow of selection, judgment, or even common knowledge; for it has been publicly shewn that he is ignorant of the commonest principles of astronomy and even arithmetic.

Such was this worthy and disinterested journalist who attempted murder, that he might rob with less chance of detection, and was occupied with stealing in his closet from that very work which he was abusing in public. Nor is perhaps a similar morality unknown among ourselves, as the Edinburgh society of bookmakers has advertised a Geography conducted upon Dr. Smith's principle of the division of labour, accompanied by the usual steam-engine. It will not, however, be upon a new plan, but upon the old plan of plagiarism, as in their Encyclopedia they have stolen nearly the whole of the author's Essay on Medals. This society of free-masons presumes so much upon the public patience, as to condemn this work as too vast for the power and means of one man. They had only to read it (as they must do when they steal) to perceive that no one man had ever such assistance from diplomatic and literary characters, not only in Europe, but in America and Hindostan.

The author must think with uncle Toby, that "this world is wide enough for us all," but he cannot allow a fair literary reputation, the fruit of forty years' labour, to be attacked by such juntas, who are indeed at the same time literary suicides, being so blinded by base and selfish passions, as not to see that they are occupied in poisoning themselves as well as the public mind by the destruction of literary reputation and influence. Calvin, the founder of

* M. Walckenaer has been generally understood to be a Dutchman from the name; but he is a genuine Frenchman, being, as I learn from a duke and peer of France, the son of Duclos Dufresnoy, a notary of Paris, guillotined on account of his wealth, by the Countess of Asfelt, a Swedish lady. However this be, he is neither destitute of learning nor talents, if rightly and steadily applied. But he should reflect that literature is of the feminine gender, and if she want modesty, all her other qualities are disregarded. The parchment that would make a book, will also make a drum; but the effect is different.

† Paris 1811, 8vo. p. 140. The bookseller also went into a process not a little curious in literary history. The supreme Court *de Cassation*, confirmed the sentence of the *Cour Impériale*, 25th April 1812, that our old bold Dane had servilely copied and stolen a vast number of passages; but that this plagiarism did not mount to the crime of forgery, as understood by the laws.

their national faith, had not a more diabolical smile when he beheld the geographer Servetus passing by his window to the stake (to which he was conducted solely by this informer's infamous artifices, and a treachery exceeding all example), than that set of jacobin reformers when they can *burn* a reputation, as their phrase is.* Nor is the similitude too strong, as they evidently mistake the modern *stiletto* for the ancient *stylus*. Our old journals are written with a comparative modesty and dignity, arising from a respect for the public and for themselves; while the new are unhappily such writings as precede a civil war, displaying such insolent falsehoods, such scandalous misquotations and perversions, accompanied with such political phrenzy, such envenomed acrimony, such concentrated malignity, as to evince that the critic only wants courage or opportunity to become an assassin. In like manner, our romances, instead of the follies and faults of the old, begin to swarm with crimes, to the great danger of young imaginations. The anonymous right also serves to increase their impudence and audacity. What had the author done in his old age to provoke such nests of hornets, who with their stings would rob and kill the harmless bees? In politics he was always an old whig, a friend of temperate liberty under a temperate monarchy, an enemy of all tyranny, especially that of an ignorant democracy; but he was neither a jacobin nor a slave, so was fair game for both. He can scarcely conceive that his repeated refusals to take any part in these new journals (for such had been his impartiality that he was equally solicited on both sides) can have led to such animosity. As life is short, he is contented with his poverty, conscious that he has in no way contributed either to oppression or insurrection.

P. xxii. M. Gossellin has since published the two last volumes of his valuable *Recherches*, replete with his usual learning and industry. The part that relates to the North of Europe is the most interesting, and he is often at variance with the author of the *Recherches sur les Scythes*, but with a moderation that is worthy of his great talents. It shall only be observed that the author retains his sentiments on most points, as Mr. Gossellin's argument often proceeds on two doubtful grounds: 1. Minute or imaginary similitudes of modern names: 2. The supposition that ancient discovery proceeded mile by mile to the regions now known to be the most adjacent, a circumstance that has never taken place in any course of successive discoveries.

P. 3. l. 3. from bottom, *for* as *read* has.

P. 9. l. 16. f. *b*. *for* Horntiff *read* Hornriff.

P. 43. The success and glory of the English army, under a leader of eternal fame, and which, it is remarkable, commenced with the Regency, have restored and confirmed the political relations. But the imprudent preponderance allowed to Russia by the Congress of Vienna 1815, must occasion a change in the real policy of England, and tend to abate her rivalry with France, as in case of any further encroachment of Russia, it is to be hoped that all Christendom will unite as in a common interest. It is to be regretted that Poland and Italy were not declared independent kingdoms, and consigned to distinct Russian and Austrian monarchs; for even then there was a prospect of independence, as in Spain under the Bourbons.

P. 101. l. 16. *for* cooking *read* cookery.

P. 105. Edinburgh, in a bleak situation, remains without a tree! The New Town should be planted like the Dutch cities; an improvement which would be at once salutary and picturesque.

P. 121. l. 21. *read* dry fish is styled the turbot (as sometimes happens in France, whence the mistake,) while the real turbot is in Scotland, &c.

P. 123. Real topazes have since been found at Cairngorm of great size, and in considerable quantity.

P. 126. To the account of Icolm-kill, may be added, that several Irish writers flourished there in the middle ages, as the two abbots Cuminius, A. D. 650. Adomnam, 680. Suibne, abbot of Icolm-kill, who died A.D. 771, according to the annals of Ulster, seems also to have been a man of learning; for there is little doubt that he was the Suibne mentioned by Dicuil, 825, as the teacher of his young studies. Dicuil's work has been published by Letronne, Paris 1814, 8vo. with more care than it deserves. In chap. vii. § 3. appears to occur the first notice of the Faroe Isles, as inhabited a century before (A. D. 725.) by some Irish hermits, (his Scotia is always Iceland.) Nay, Iceland was known to the Irish in 795, for the description of Thule, given to him by Irish priests (ibid.), can only refer to that island, as his informers had at midnight at the summer solstice sufficient light to deliver themselves from vermin, "*pediculos de camisia abstrahere*:" implying a latitude from 64° to 65°. But when the editor gravely gives my illustrations of the *Papæ et Peti*, to be found in my Enquiry into the History of Scotland (which he quotes and has read) as his own, he shews that he is no stranger to the modern grand system of plagiarism.

Dicuil lived in the Western Isles, as he informs us himself, that is most probably in Icolm-kill and others adjacent. But when the Normans began their ravages he seems to have retired to France, where he wrote, as his account of the elephant sent to Charlemagne evinces. His work has only been found in two manuscripts in France and two in Italy. Of course the note in p. 482, which implies that it is lost, should be corrected. It consists chiefly in extracts from Pliny and Solinus, and it is to be regretted that he did not give more names of his own time, and more original matter.

* See the very curious and interesting *Mémoires Literaires* of D'Artigny, where all the letters and the original processes may be found. Calvin, enraged at some epistolary remarks of Servetus, denounces him as a heretic, fit for the flames, to the Archbishop of Vienne, by surreptitious letters written under the name of a third person; and in order to prove his hand-writing (without which he could not have been condemned), sends him the letters of Servetus! All this preceded the process at Geneva. Many reformers, religious and political, have similar pretensions.

P. 182. In Feb. 1817, a census was taken of the inhabitants of Paris, by which they were said to exceed 700,000. But as that estimate was understood to have been formed in order to ascertain the necessary supply of provisions, it became an object of private interest to augment the number of mouths.

P. 193. l. 5. *for* singular *read* peculiar.

P. 197. A curious memoir, with a map of the coal-mines of France, by M. Cordier, appeared at Paris 1815, 8vo. The only copper-mines worked are those of St. Bel and Chesy, department of the Rhone.

P. 201. l. 11. *after the words* house of Austria, *add* remaining subject to Spain till the treaty of Utrecht, 1712, when they passed to the German emperor.

P. 205. l. 15. *for* porcelain, clay *read* porcelain-clay.

P. 232. In the maps of Europe, Spitzbergen and the Azores, which are out of the scale, should be given on the margin. Each continent should be complete in itself.

P. 255. l. 29. for north-west *read* north-east.

P. 257. See an account of the Carpathian chain by M. Wahlenberg, Ann. de Chimie, 1816. p. 383. Perpetual snow is only seen on one summit.

P. 262. Tyrol has been finally incorporated with Austria.

P. 267. note, *for* classes *read* divisions.

P. 268. note. The Prussian monarchy has since revived with greater extent.

P. 281. The account of Spain and Portugal may be in some parts improved from the work of Antillon, *Elementos de la Geografia, Astronomica, natural y politica de Espana y Portugal*, Madrid, 1808.* He computes the population of Spain at 10,351,075, on 15,105 square leagues, of 20 to the degree. That of each province he gives p. 122, and the above total includes Majorca, Minorca, and Iviza. The province of Guipuscoa is the most populous, presenting 2009 on a square league; that of Cuenca (not Cuença), the least, having only 311.

Madrid in 1803 had 168,000 inhabitants. The silk manufactories of Valentia occupied 25,000 persons. Seville was computed at 100,000: in the cathedral was preserved the library of Fernando Colon, the son of the great discoverer.

Antillon's account of the chains of mountains is one of the most interesting parts of his work. Of the Northern Cordillera, which long protected the remains of the Christians from the Moors, the chief peaks are those styled of Europe on the south of Llanes, and there are but few passages which lead from Asturias to the kingdom of Leon.

On the west of the sources of the Ebro, begins a vast chain running north and south, which Antillon proposes to call the Iberian. It presents the summits of Oca, Urbion, Moncayo, Molina, &c. partly divides Castille from Arragon, pervades the kingdoms of Valentia, Murcia, and Granada, and ends on the coast at the capes Palos and Gata: (for capes Martin and Oropesa must be only terminations of branches, not being in the general direction of the chain.) This important range divides the rivers that join the Ebro from those that flow into the Tajo and the Douro: and in the southern part those that augment the Guadiana and the Guadalquivir. The chief summits rarely, however, pass 1500 *varas*, or about 3800 English feet.

Antillon regards many of the other chains as branching from the Iberian. Such is that passing E. and W., and dividing the basons of the Tajo and Douro. Beginning near the sources of the Xalon, it passes under various names, as Sierra de Paredes, Somosierra, and still more to the west Guadarama. Cavanilles says this chain is chiefly granitic; and the summit called Pegnalara, not far from it, is estimated at 2834 *varas*, or about 7000 English feet. In fine, pervading Portugal, it assumes the name of the mountains of Estrella, and towards its termination that of Cintra. Near the sources of the Mondego is a great upland plain, about three leagues in length, by one in breadth, on which snow remains from October to June. It includes three lakes, celebrated in Portuguese fable.

An inconsiderable chain, known by the summits Rabanal, Trebinca, Geroz, separates the Douro from the Minho, and Spain from Portugal.

Almost parallel with the chain of Guadarama is another branch of the Iberian chain, which divides the bason of the Tajo from that of the Guadiana. This branch, at first inconsiderable, augments in height towards the town of Tarancon, but exceeds not 769 *varas*. It passes under various names, as Yevenes and Guadalupe, and pervading Portugal between the Setubal and the Tajo, terminates in Cape Espichel.

The third main branch is the Sierra Morena, which ending at Cape St. Vincent, forms an extremity of Europe. Some summits are from 820 to 880 *varas* in height.

The last great chain, though not of great length, is the most elevated of all, forming on the south a rampart, which, with the Pyrenées, the Northern chain, and the Iberian, supports a great part of Spain, so absurdly called a Peninsula, to which name it has less pretensions than Italy. Antillon proposes to style this the southern chain, consisting of the mountains of Granada and Ronda, with those called Gador, Sierra Nevada and Bermeja. It terminates at Gibraltar, but branches into various capes. It is asserted that the summit in the Sierra Nevada called Mulhacen, is not less than 4254 *varas* in height, or near 10,700 feet, thus exceeding Mont Perdu, the highest of the Pyreneés. This height was measured in 1804, by a geometrical level taken from the shores of the Mediterranean

* His *Lecciones de Geografia*, Mad. 1804—1806, 2 vols. 8vo. are chiefly from the Introduction to this work by La Croix and other French authors: English books being unknown or prohibited in Spain, which however continues to import quantities of French.

terranean.* Prior to this, the Picacho de Veleta, which has 4153 *varas*, was regarded as the highest of the Sierra Nevada. The region of perpetual snow is here at 3305 *varas*. The mountains of Alpujarras and Contraviesa form an inferior parallel chain, as usual in grand ranges of mountains. The mountain called Gador is an enormous mass of marble, covered with snow for nine months, and of 2600 *varas* in height. Filabres is also wholly marble. Luxar is 2287 *varas*; Murtos, 1770. †

Amidst the new objects with which Geography has been recently enriched, is the calculation of the height of plains, and of a region in general above the level of the ocean. The interior of Spain is about 1800 feet above the ocean; Madrid still more, standing fifteen times higher than Paris. Such comparative heights tend to discover the causes of a hotter or colder temperature, which depends upon them as well as upon latitude. The plain of Castille being so high, we no longer wonder that the orange-tree refuses the open air, though in the same parallel with the south of Italy.

From the valuable work of Antillon we learn, that the porous cooling vessels used in Spain, as in Egypt, are formed of a white clay found near Andujar, in the kingdom of Jaen. ‡

P. 312. l. 5. *for* clearly *read* cleared.

P. 337. l. 18. omit the words PROGRESSIVE GEOGRAPHY.

P. 339. In the description of Denmark, the frequent little passages relative to Norway. should all be transferred to Sweden, to which kingdom that country is now annexed. The ancient servitude and present freedom of the Danish peasants are explained by M. Neergard, in a pamphlet, Paris, 1813, 8vo. This emancipation has been memorized by a public monument.

P. 345. l. 10. from bottom, omit the point of interrogation, and *read* exorbitant.

P. 355. Von Buch says that the mountain called Snahatta is the highest in Norway, being 8120 feet. It is of mica-slate in the Dofra Fial, lat. 62° 30′, being the highest in the *north* of Europe or of Asia. In the Norse language, *tind* is a peak, whence evidently our Scottish Tinto, a solitary and romantic peak; as the Ochilo, like the *Ocellum* of Italy (see p. 453.) are from the Teutonic *hoch hell*, or high hill. The Ocellum of Ptolemy, in North Britain, is thus a proof of Gothic origin. In Lapland, Sulitelma is regarded as the highest, being 5910 feet, lat. 67° 10′. Rocks are found in Norway of granular smaragdite: the *rapakiri* is coarse red granite. The downy willow is the last shrub of expiring vegetation; as in Lapland the last plants are *astragalus potentilla*, gentian, and the pigmy ranunculus. §

P. 361. l. 6. from bottom, *for* Dutch *read* Danish.

P. 370. The passage concerning Finland should with others be now transferred to the account of European Russia.

P. 378, note (*). A paper on the manufacture of porphyry appeared at Paris, 1806, by M. Neergard. It might well be imitated in serpentine at Portsoy in Scotland.

P. 385. Antillon's table of the population of Portugal is as follows:

Entre Douro e Minho - -	291¼ -	907,965
Traz os Montes - - - -	455 -	318,665
Beyra - - - - - - -	753 -	1,121,595
Estremadura - - - - -	823 -	826,680
Alentejo - - - - - -	883 -	380,480
Algarve - - - - - -	232 -	127,615
		3,683,000

The first column gives the superficial contents in square leagues, twenty to a degree. ‖ The number of priests and monks he computes at two hundred thousand.

But this table proceeds upon the doubtful calculation of the numbers for each hearth.

P. 393. l. 5. *for* description *read* descriptions.

P. 394. Don Antonio, King of Portugal, died and was interred at Paris. His epitaph may be seen in the common descriptions, and his Prayers or Confessions, with a good portrait in armour, were repeatedly printed at Paris towards the beginning of the seventeenth century.

The conduct of the Jesuits in the affair of De Chaste, has excited an indignant narrative in the *playdoye* of Arnauld, 1594. The Jesuits, ever attached to Spain, whence they derived their origin, excited the people of the Azores against the French, so that after the conflict, twenty-eight *seigneurs* and fifty-two *gentilhommes* were butchered, and many soldiers hanged. Nay, near five hundred monks, who had supported Antonio, were put to death. For this he quotes a work called *Union de Portugal*, fol. 215; but there must be exaggeration.

P. 401. By the Act of the Congress of Vienna, the independence of the nineteen Swiss cantons is recognised, and three new cantons are added (§ 75), namely, the Valais, the territory of Geneva, and the principality of Neufchatel.

The bishopric of Basle, and the town and territory of Bienne, are annexed to the canton of Berne as portions of the confederacy. Basle has also been relieved by the consequent demolition of the fortress of Huningen, and a declaration of the French government, that no new fortifications should be raised at a distance less than three leagues from Basle. ¶

* Antillon 236. † Antillon 246.

‡ Perhaps this ingenious man is now an exile, having published in Majorca his *Soberania de la Nacion, contra el despotismo y la hypocresia*, 1810.

§ See also his Mem. Ann. de Chimie, 1816. p. 183.

‖ Elementor de la Geografia, &c. Mad. 1808.

¶ Treaty of Paris, 20th Nov. 1815.

The

The lordship of Razuns is ceded by the Emperor of Austria to the Grisons: and the French king declares that the road to Geneva by Versoix shall be free on his side from all customs on posts, travellers, or goods. The king of Sardinia assigns an increase of territory to Geneva, minutely described in the Act of Congress, § 80. In short, all the powers concerned have been deservedly liberal to the Swiss, who had suffered much during a protracted war.

P. 401. The political importance of Swisserland is happily increased, and it is to be hoped that it will ever remain the free abode of honesty and industry.

P. 403. l. 12. from bottom, for *deep* read *steep*.

Ib. l. 7. f. *b. read* annexed to the Swiss Cantons, now twenty-two in number.

P. 409. M. Brochant (Ann. de Chimie, 1816. p. 97.) argues that the summits of the Alps are not granite, but a compound of felspar and steatite, which forms a grand part, while the granite is on the southern side.

P. 413. The Valais is now a Swiss canton.

P. 414. l. 2. *for* Westphalia must now be *read* Hanover. The pretended barrier of France has been established against her.

Ibid. l. 3. from bottom, *for* notice *read* acquire.

P. 416. For the ancient geography of Germany, the learned reader will compare the able and elaborate work of Gossellin, *Recherches sur la Geographie des Anciens*. Paris 1797 — 1813, 4 vols. 4to.

P. 423. The Saxon dominions have since been greatly reduced, a large portion having been assigned to Prussia; as settled by § 15. of the Act of Congress. But as the line of demarcation is ideal, a map will give a more just idea than a repetition of dry names.

Ib. line ult. The electorate, now kingdom, of Saxony suffered much during the last years of a most destructive war, especially before and after the battle of Leipsic.

P. 425. The electorate of Hanover has been enlarged and erected into a kingdom. Prussia cedes the principality of Hildesheim, the town and territory of Goslar, the principality of Ost-Frisen, comprehending Harlingerland, under stipulations for the navigation of the Ems and trade of Emden: with more minute portions. In return, Hanover cedes some parts enumerated in the Act, § 29. The grand duchy of Oldenburg is now surrounded by the Hanoverian dominions, to which the bishopric of Osnabruck is attached.

P. 427. Hessia is now a grand duchy; and in exchange for the duchy of Westphalia, ceded to Prussia, is assigned a territory on the left bank of the Rhine in the former department of Mont Tonnerre, of 140,000 inhabitants. Act, § 47.

P. 428. Both houses of Mecklenburg have the title of Grand Dukes.

P. 430. l. 6. *for* rigour *read* vigour.

Lubeck, Frankfort, Bremen, and Hamburg remain free cities. Swedish Pomerania has passed to Prussia.

P. 432. Bavaria is now a kingdom, including the grand duchy of Wurtzburg and principality of Aschaffenburg. Act, § 44. The boundaries with Austria seem still not to be accurately adjusted. The grand duchy of Baden embraces a great part of the former palatinate.

P. 434. *for* Wurtemburg *read* always Wurtemberg (*burg* means a city, *berg* a mountain). It is ranked as the fourth of the new kingdoms.

P. 436. Baden is now a grand duchy of considerable extent and importance, as opposed to France on the right bank of the Rhine.

P. 441. It is greatly to be regretted that the description of Italy by Galanti, which was to have formed vol. iv. of his translation of this work (Rome 1805—1810, 8 vols. 8vo.) has not appeared. No man could be better qualified than the learned professor for a description of his country written *con amore*. I beg to return him public thanks for his truly classical translation and his repeated applause, which affected me the more, as he asserts in his preface that I died at Paris in 1803. I beg to assure him that I am alive. The *Censore Apostolico*, whom I thank for his polite annotations, may also rest assured that I am still an Englishman and a heretic.

Galanti probably deferred this volume in the patriotic hope of seeing his country an independent kingdom. But the imprudence or destiny of Napoleon led him to abuse or degrade all the grand materials he had in his hands. What he gained as a soldier, he lost as a statesman.

P. 444. note. Nice has passed to the kingdom of Sardinia.

P. 445. In a recent eruption of Vesuvius, May 1816, a hollow column of lava rose about 35 feet, and 5 in diameter, spouting, like a jet d'eau, cinders, stones, and fire. This new phenomenon is mentioned Ann. de Chimie, 1816, p. 401.

P. 446. The account of Etna may be improved from the curious work of Ferrara, *I Campi Flegrei della Sicilia;* Messina, 1810, 4to. "from the press of the British army." An unique and highly laudable instance of such an impression. See an account of this interesting work, with many extracts, in Petralogy, or a Treatise on Rocks; London, 1811, 2 vols. 8vo. His decided opinion, after an examination of thirty years, is, that columnar basalt is unknown in modern eruptions, but is the ancient product of volcanoes which existed under the primeval waters. This opinion he explains and enforces with much sound reasoning.

P. 543. Tuscany is now a grand duchy, as before the French usurpation. The sovereign is Ferdinand of Austria.

P. 454. Lucca is now a duchy, assigned to Maria-Louisa, formerly queen of Etruria. Act of Congress, § 101.

Ibid. Elba belongs to Tuscany. Ib. § 100.

P. 455. Piedmont is returned to the Sardinian sceptre, and among other additions to that monarchy is Genoa.

P. 456. Milan is included in the kingdom of Lombardy, which is annexed to Austria. There

was

was published at Milan, about 1812, a *Topografia Italica*, 2 vols. 8vo. which I have not been able to procure.

P. 558. Venice is included in the kingdom of Lombardy, and it is to be hoped that the Austrian government will at length perceive the maritime importance of that interesting city.

P. 460. Parma and Placentia constitute a duchy held by Maria-Louisa, formerly empress of France.

Ibid. Modena remains an ancient duchy, the present duke being Francis IV.

Ibid. Genoa is annexed to the kingdom of Sardinia, as already mentioned; and as a capital sea-port, is an addition of great importance.

P. 461. The passages concerning the states of Italy and Sardinia were written 1807, or 1811.

P. 463. last note. The rocks of ocular granite have since been discovered. See the *Geologie* of Faujas, tome ii. or the author's Petralogy.

P. 464. Dalmatia is assigned to Austria; and it is to be regretted that Bosnia and Servia were not added instead of portions of Italy, especially as these wide provinces are separated by barriers of mountains from the other Turkish possessions, and in constant insurrection against the Porte.

P. 542. The governments in Siberia have sometimes been only two (as in the reign of Catherine II. Tobolsk and Tomsk or Kolyvan were conjoined,) but at present there are three: Tobolsk in the west; Tomsk or Kolyvan in the middle; and on the east Irkutsk. There are inferior captaincies of Nershinsk, Yakutsk, and Okhotsk.

Omit that of Caucasus, which, according to the more precise ideas recently adopted concerning the grand natural boundaries between Asia and Europe, belongs to the latter continent. The Russians have acquired a considerable tract to the south of the Caucasus, but this conquest must be regarded as entirely Asiatic.

P. 559. l. 5. f. *b. read* proposition.

P. 565. l. 8. *read* Gossellin.

P. 568. note * *after* China *add* but this argument is too absurd to require any answer.

P. 590. line ult, *for* after *read* aster.

P. 591. l. 17, 18. This ape may be the orang-otang, and the horse-tiger the hippopotamus.

P. 592. The isles of Leoo-keoo have been lately visited by captain Broughton, in whose voyage they form the chief feature. The port and seat of government is Napchan, on the N. W. The people seem to be rather Japanese than Chinese, but they are tributary to China.

P. 598. l. 10. *for* chain *read* Chan.

P. 603. l. 25, 26. *read* Islenieff *and* ranges.

P. 630. l. 3. from bottom. In the Japanese maps of their country, there is however delineated a very long canal, passing through the length of the chief island. It is singular that this great canal has escaped Kæmpfer and Thunberg.

P. 635. l. 5. f. *b. for* ambergrease *read* ambergris.

P. 638. note †. They were published in 1813.

P. 694. The account of Tunquin and Laos by Marini, a missionary, was published at Venice 1665, 12mo. The French translation, by Pere Le Comte, (Paris, 1666, 4to.) is now before me. It is a curious work, full of uncommon and sensible observations. His constant satire against the Talapoins is amusing, as he seems either to forget or to insinuate the resemblance between them and the Catholic monks. The snowy mountains of Tibet are visible from Laos, (p. 333.) a circumstance which, with the grandeur of the river of Tunquin, is irreconcileable with our maps. By his account it rivals that of Siam, and rises in very distant mountains.

Another account of Tunquin was published at Paris, 1812, 2 vols. 8vo. by M. Bissachore, a missionary.

This work is interesting, though written with some credulity, and in a vague declamatory style, little adapted to solid information. If he is to be credited, one empire is now formed of Tunquin, Cochinchina, Siampa, Camboge, Laos, and Lac-tho, the last being a little province on the north of Laos. The largest river is that of Camboge, open to large ships for twenty leagues, and sometimes two miles in breadth. A great natural curiosity is a cavern which traverses a mountain, and is pervaded by a river like a canal. The armadillo seems to exist in Lac-tho. (P. 97.) In Tunquin are found (p. 110.) the potatoe and the *batatas*. There are about twenty kinds of oranges, a delicious kind being green, with a fine skin like taffety. When trees seem dead (p. 141.), they are cloathed in strong earth, secured by bands, so as to push roots at the tops, which are planted, and produce fruits in a year. *Credat Judæus*. Singular facts require due illustration.

P. 711. l. 12. from bottom, for * put †.

P. 720. l. 8. f. *b. for* it was *read* they were.

P. 723. The sources of the Ganges seem at length to have been explored by lieutenant Webb, whose complete want of mineralogical ideas is however to be lamented, nor is it easy to explain, why he permitted the timid natives to surpass his exertions by a journey of seven days. The Alienunda is the chief stream, being at the junction with the Bagyrati, one hundred and forty-two feet broad, while the latter is only one hundred and twelve. Yet is it on the Bagyrati, that the noted cow's mouth appears some miles beyond Gangotis*: being a large stone like a cow in the midst of the stream. Beyond, the river is concealed under beds of snow, which in like manner were found to conceal the source of the Alienunda.† That is, both the sources of the Ganges are in snow, or glaciers, like those in the Alps, and on the south side of the Himmala, in contradiction to our maps founded on the fables of the Chinese lamas. All this was predicted by the author in 1800, as may be seen in his Map of Central Asia, the only one formed by himself.

P. 723. l. 22. *read* mouths of the Ganges.

P. 726. l. 14. f. *b. for* volume *read* part.

* Calcutta Tr. xi. 506, and map.

† Ibid. 524.

P. 733. l. 19. f. *b. for* principally *read* principality.

P. 741. note. The information concerning Bindachul seems doubtful, as Dr. Buchanan himself objected to this idea.

P. 743. The kingdom of Cabul or Candahar, politically confounds the eastern part of Persia with a portion of Hindostan; but this circumstance cannot affect the natural geography. To confound the Indus, or its confluent streams, with Persia, would be to embroil all ancient and modern ideas on the subject.

Cabul strictly belongs to Hindostan, but its present relations with Eastern Persia may arrange it with that division in a political view.

APPENDIX

TO

THE FIRST VOLUME.

No. I. *Remarks on the Russian and Spanish Pronunciation*, &c.*

THE confusion so frequently met with in books and maps, from the mode of expressing Russian proper names, arises principally, if not entirely, when otherwise any degree of accuracy is attended to, from this circumstance:—the Germans render the third letter of the Russian alphabet *vedi*, which is precisely the Latin or English *v* †, by their *w*, as having the same sound; pronouncing *was wollen wie*, as we should *vas vollen vie;* and accordingly, on their first coming to England, they naturally say *vat vould ve*, instead of *what would we*. Now it is well known that most of the maps and books concerning the geography or history of Russia, used in France and England, are translated from the German; in which the translators, adhering strictly to the letter of *their* original, render the words, especially in our language (for the French having no *w* may give it what sound they please) totally different. What a different sound, for instance, in English have *Mohilew*, *Tambow*, *Tschernigow*, *Charkow*, *Okzakow*, *Saratow*, *Kiow*, *Wolga*, *Newa*, *Newski*, *Orlow*, *Dashkow*, &c. from *Mohilef*, *Tambof*, *Chernigof*, *Kharkof*, *Otchacof*, *Saratof*, *Kief*, *Volga*, *Neva*, *Nefski*, *Orlof*, *Dashkof*, &c. as they are spelt and pronounced in Russian. The Rev. Mr. Smirnove prefers rendering this termination by *ove*, *Tambove*, *Chernigove*, *Dashkove*, *Orlove*, &c. and his opinion ought to have great weight, as that of a gentleman acquainted with both languages. However, the difference between us is nearly if not quite none at all: and I adopted the *of* after the Rev. Mr. Coxe, and many other respectable names, only for the sake of simplification, and because to my ear it is the better English termination of the two. At any rate the totally different German orthography ought to be for ever exploded from all English maps and writings. — The Polish and Hungarian *c* and *z*, copied by the Germans, have likewise, in an inferior degree, added to the perplexities; *czar* for *tzar*, *Czernichew* for *Chernichef*, *czarowitz* for *tzarevitch*, *Petrowitz* for *Petrovitch*, &c.

The following are a few geographical terms:

Ocean — *Okeáne.*

Sea — *Morè; Tikoë morè*, the Peaceable or Pacific sea.
Tschernoë morè, the Black sea.
Sredizemnie morè, the Midland sea; Mediterranean.

Lake — *Ozero; Bielo ozero*, the White sea; *Ladogskoi ozero*, the Lagoda lake.

Cape or promontory — *Noss*, signifying likewise the nose; as does the *Nase* of Norway.

Strait — *Prolife; Veygatskoi proliva*, Veigat's straits.

Gulf — *Zalife;* } *Zaliva Phinskago*, the gulf
Bay — *Zalife;* } of Finland. Only one
Creek — *Zalife;* } word for them all.

River — *Reka.*

Mountain — *Gora.*

Hill — *Gorka*, the diminutive of *Gora.*

Valley — *Dolina.*

Forest — *Less* (pron. *Lyess*).

Desart — *Puslyi.*

Plain — *Dolina:* also *Rovnina* and *Glade.*

Peninsula — *Poluostrof.*

Island — *Ostrof.*

Rock — *Kamen.*

* For those on the Russian the author is indebted to the Rev. Mr. Tooke.

† Or *f* in the word *of*, e. g. coat of arms; man of war, &c. where the *f* is neither more nor less than a *v.*

City

City — *Gorod; Novgorod*, New city; *Staragorod*, or *Bohem Stargard*, Old city.
Town — *Gorodok*, the diminutive of the foregoing.
Nation or country — *Narode.*
Native country — *Rodina* or *Otêcheslvo.*
Region — *Strana.*
Kingdom — *Korolevslo.*
King — *Korol.*
Climate — *Klimatt* (evidently borrowed).
Earth — *Zemla*, (pron. *Zeml. ya*,) *Novazemla*, New earth; like Newfoundland.
World — *Svet*, (pron. *Sv. yet*).
Province — *Provintzia*, or *Guberniya.*
Territory; district — *Uyesd; oblast.*
Isthmus — *Istm*, also *pereschеek.*
Sound — *Sund: Nutka-sund.*
Volcano — *Ognеduischutschaia gora*, (burning mountain).
Whirlpool — *Puchina.*
Haven — *Gavane.*
Port — } The same.
Harbour — }

From Mr. Tooke's information it likewise appears that the common termination *skoy* is merely an adjective possessive or appellative; as *Finskoy*, Finnish; *Imperatorskoy*, Imperial, &c.: So the Aluetskoi, the Aleutian islands, &c.

A few remarks may also be offered on the Spanish pronunciation, from Dobrizhoffer and others.

Ch is pronounced as the German *tsch* (or *ch* in our church); so *mucho, Chili*, are *mutscho, Tschili.*

X and *J* are sounded gutturally like *h*; as *mujer, muher; jamas, hamas; Ximenez, Himenez.* In the sound of *x* our author seems to err, for it was uniformly put by the Spanish in expressing foreign words, as *sh*; thus *Xah* is *Shah; Xoa* is *Shoa; Xerez* is *Sherez*, &c. &c. The sound of *x* as a mere *h* seems a provincialism, or a recent affectation. *G* before *e* or *i*, is sounded as *j* or *h.*

ç is precisely equal to *z.*
Ll as *li*; thus *colmilo, colmilio.*
n as *gn* in French; *Espana, Espannia.*
qu as *k.*

Link, and his ingenious translator, present some remarks on the Portuguese pronunciation. The Portuguese do not use the *i* after *t*, &c. as *tierra, terra.* The *ch* is pronounced as in French; and both the *j* and the *x* like the French *j.* The final *ao* is sounded *aung*; and the final *m*, which is frequent, like *ng.* The *n* between two vowels is changed to *nh*; thus *vino* becomes *vinho*, pronounced *veenyo.* The Portuguese is averse to the *l*; hence the articles *lo, la*, become simply *o, a*, this *o* being pronounced as *u.*

No. II. *Value of Coins used in common Calculations.*

	French Money. Frs.	Cents.	*Sterling.* L.	s.	d.
A Florin of Germany, -	2	20	0	1	10
——— Austria, -	2	65	0	2	2
Rix Dollar of Prussia, -	4	0	0	3	4
Dollar of N. America, -	5	40	0	4	6
Guinea of England, -	25	0	1	1	0
Rix Dollar of Denmark,	5	70	0	4	9
Piastre of Spain, -	5	30	0	4	0
Florin of Holland, -	2	20	0	1	10
Lire of Italy, -	0	85	0	0	8½

	French Money. Frs.	Cents.	*Sterling.* L.	s.	d.
A Scudi of Rome, -	5	53	0	4	7
Ducat of Naples,* -	4	30	0	3	7
Rouble of Russia, -	4	5	0	3	4½
Rix Dollar of Sweden -	5	80	0	4	10

The common large tables of Coins are not only uselessly prolix, by including those never mentioned in books of history or travels, but present many antiquated names and values, and are in other respects often grossly erroneous.

No. III. *Extracts concerning the Chinese War in Little Bucharia, 1755 to 1759.*

From the Histoire Generale de la Chine, tome xi. Paris 1780, 4to. p. 550, &c. *This work being rare and expensive, the following brief Summary of that remarkable War, which so much enlarged the Chinese Empire, may be acceptable, especially as it presents every Circumstance which can illustrate the obscure Geography of an interesting Country.* (See page 564.)

SINCE the accession of the present, or Mandshur, dynasty, the chief wars of the Chinese have been with those Moguls called Kalkas, who dwell towards the rivers Kerlon and Tula. These tribes being at length subdued, and the family of the Kaldan, or sovereign, extinguished or forgotten, a new vicinity produced, as usual, a new enmity, and the Chinese arms were directed more to the west. The throne of the Eluts was contested by Debatchi, (called by the Chinese Taoua-tsi,) and by another chief named Amoursana. The latter was forced to withdraw, and seek refuge in the Chinese court at Geho. The kings of the Eluts used to reside on the river Ili, where a city has since been built by the Chinese; and though chosen as a place of exile, was greatly increasing in population.

Kien-Long, the Chinese emperor, wished to avoid a distant and expensive war against the Kalmuks of

* A German ducat is about 9*s.* 4*d.*; the dollar 4*s.* 8*d.*

Soongaria, also called Eluts by the Chinese, but being irritated by the disrespectful conduct of Debatchi, he undertook this war in opposition to the advice of all his councils. In the beginning of 1755, Amoursana proceeded at the head of a Chinese army against Debatchi, who was taken prisoner, and sent to the court of Pekin, where he soon after died. Amoursana was named king of the Eluts or Kalmuks under the protection of China; but speedily revolting, he attacked the Chinese stations on the Ili, destroyed the forts and redoubts, and having slain the two Chinese generals Panti and Aiongan, he pitched his camp before Palikoun, one of the chief towns of the Eluts, which was strongly garrisoned by the Chinese. This town is probably the Bulugan of the Russian maps, about 60 miles N.W. from the lake Barkol.

Other Chinese generals were equally unfortunate; but the garrison of Barkol was reinforced, and checked the progress of the enemy. This seems clearly to be the town of Barkol, or Ortic, on the east of the lake of Barkol. At length, in 1757, the emperor was fortunate in appointing a general of real skill, named Tchao-hoei, and the dissensions of the Kalmuks contributed to their destruction. The Chinese lieutenant-general Fouté was also a man of distinguished courage and enterprise: and Amoursana was soon forced to retire into Siberia, where he died. Numbers of the Kalmuks took refuge among the Pourouts or Buruts, a part of the Kirguses; others among the Tanguts towards Tibet, and among the Torguts or more western Kalmuks. Kien-Long divided the country of the Eluts among several chieftains, who were bound to the court by homage and titles.

The country of Little Bucharia, styled by the Chinese Hoa-men, or Hoei-pou, that is, *the horde of Mahometans*, had been subject to the Kalmuks of Soongaria. During the course of the war, the Mahometan chiefs of Yerquen or Yarcand, and Hashar or Cashgar (princes called by the Chinese the Greater and the Lesser Ho-tchom,) ungrateful for favours received from Kien-Long, had slain a Chinese officer and 100 cavalry. The Chinese general, Tchao-hoei, advanced against the Ho-tchoms, who being defeated retired to Yerquen, which surrendered; and was speedily followed by Hashar. "Besides Hashar and Yerquen, they likewise became masters of seventeen other towns large and small, and of 16,000 villages or hamlets. In the district of Hashar were reckoned about 60,000 families; without comprising those who had followed the rebels, and about 12,500 people, exiles in the country on the Ili. Hashar was little more than ten *li* (probably of 250 to the degree) in circuit, and only contained 2500 families. To the east of Hashar were situated Ouchei and Akson. Between this last town and Hashar were three towns, Poisonpat-hotchil, Poï-inké, Entorché; and two large villages, Peserguen and Arvouat, inhabited by about 6000 families. To the west of Hashar were the Buruts of Ertchi-yen (probably Adjian); and between the two, the towns of Paha-ertouché, Opil, Tajamelik; and the villages of Saïram and Tokousak, which however were only computed at 2200 families. To the south of Hashar, before arriving at Yerquen, are situated two towns, Inkatsar-han Kalik; and two hamlets, Tosohoun and Kavalkar: the four containing about 4400 families. Finally, to the north of Hashar, are the Buruts, properly so called, to whose country one passes by the town of Arkoui, and the village of Horhan, which may contain nearly 800 families. On a general computation, the Mahometans depending on Hashar were about 16,000 families, estimated at 1,000,000 heads, as is proved by the public registers."

There were fifteen degrees of magistracy; among which the chief was that of Akim, or governor of the city; his lieutenant the Hichehan; the Hatsee, or judge of criminal affairs; and the Marab, or collector of the taxes. The letter of Tchao-hoei to the emperor, 19th September, 1759, presents further particulars. Chinese garrisons were established even in small posts, as Opil, Tajamelik, Tchik, Entorché, and Païsoupath.

Meanwhile Fouté pursued the fugitive Ho-tchoms, or Mahometan chieftains, whom he defeated at Atchour, whence they fled towards Badakshan, and arrived at Poulok-kol. Fouté continued the pursuit to the great range of mountains (Belur Tag); and learnt from a native that the enemy had passed, and arrived near Badakshan, and had ſtill a very high mountain to ascend, situated between two lakes, that on the one side being called Poloun-kol, and that on the other side Iſil-kol. Beyond the former is a high mountain, whence Badakshan may be descried. Fouté pursued the Mahometans again, defeated them amidſt the mountains, and summoned the governor of Badakshan to surrender the Mahometan princes. One had died in battle, but the head of the other was sent to Pekin; and the Chinese general retired satisfied with his success.*

Position of the chief Places subject to the Eluts or Kalmuks; the Longitude computed from the Meridian of Pekin. (Ib. xi. 575.)

	Latitude. Deg.	Min.	*Longitude.* Deg.	Min.
Kou-tché, - -	41	37	33	32
Pou-kou-aulh, - -	41	44	32	7
Chaiar, - -	41	5	33	21
Cou-ko-pou-yn, -	41	20	33	40
Aksou, - -	41	9	37	15
Saïlim, - -	41	41	34	40
Païi, - - -	41	41	35	12
Ouchei, - -	40	6	38	27
Goaché, - -	40	19	42	50
Pesch-karam, or Poche-kolmou,	39	20	42	10
Hashar, - -	39	25	42	25

* The reign of Kien-Long is here continued till 1780, but there is no hint of his having visited Badakshan, a reported but most improbable circumstance.

	Latitude. Deg.	Min.	Longitude. Deg.	Min.
Ingazar (Inkesal),	38	47	41	50
Tajamelik,	39	6	42	53
Yerquen,	38	19	40	10
Oulelek,	37	41	39	48
Chatou,	37	43	39	30
Harhalik,	37	41	39	15
Selekoueulh,	37	48	42	24
Koukiar,	37	7	39	2
Santchou,	36	58	37	47
Tououa,	36	52	37	7
Paltchouk,	39	15	39	35
Peichéniya,	36	26	35	53
Ilitchi,	37	0	35	52
Halahaché,	37	10	36	14
Yulongaché,	36	52	35	37
Tchila,	36	47	34	42
Také,	36	13	33	45
Kelia,	37	—	33	33
Antchiyen,	41	28	44	35
Isitalchan,	41	48	45	6
Marhalan,	41	24	45	10
Namkan,	41	38	45	40
Haohan,	41	23	45	56
Altoubei,	41	33	48	10
Tachekan,	43	3	47	33
Badakchan,	36	23	43	50
Chekonan,	36	47	44	46
Gaolochan,	36	49	45	26
Ouahan,	38	0	45	0
Poloeulh,	37	0	43	38
Hatchouté,	37	11	42	32

No. IV. *Construction of the Southern Mountains of Hindostan.*

[Communicated by Dr. Buchanan.]

The most common rocks in *Karnata*, that is to say in the country above the *Ghats*, belonging to the British and their ally the *Raja* of *Mysore*, are various granites and gneisses with other aggregate stones, disposed in vertical strata, and much intersected by veins of quartz and of felspar. Some of these veins are of great thickness. The granites are of great variety, and some of them and of the porphyries are very beautiful, afford large masses for building, and take an elegant polish. Iron-shot quartz and hornstone are very common; as is also schistose mica, most beautiful specimens of which may be procured on the *Kari-ghat* hill which overlooks Seringapatam. Hornblende and pot-stone, with a variety of rocks of an intermediate nature, are also common, and afford excellent materials for building. Of the first have been formed the highly polished columns by which Hyder's tomb is supported. In almost every part of the country are found in the soil sporadic calcareous concretions, which in some fields are very abundant, and supply the inhabitants with lime.

Draveda, or the country between the Eastern *Ghats* and Madras, consists nearly of the same materials with those above-mentioned; but the most common aggregate rock is one composed I imagine of small masses of arid and fat quartz united. Some suppose that what I have called arid quartz is felspar in a state of decay: the stone however is excessively hard, and an excellent material for building, although it does not admit of a marble polish.

In the province of Coimbetore the same vertical rocks form the basis of the country; but in many parts they are covered entirely by a calcareous *stratum*, which in its nature and appearance entirely resembles the sporadic concretions found to the northward; and these also are common in Coimbetore. That it is a tufa, or deposition from water, I have no doubt, having found it marked by the impression of leaves of trees, and also united with small fragments of the primitive rocks, so as to resemble the cement formed of lime and small gravel.

The maritime regions between the sea and the western mountains from Pali-ghat to Goa, and probably still further north and south, has for its basis a solid grey granite without veins of quartz. Towards the north I observed intermixed with this granite rock of talcoze argilite and hornblende slate. The most remarkable stratum in this part of the country lies over the primitive rock, and by the natives is called Brick-stone. It is an indurated clay containing much oxyd of iron. While in the stratum, and covered by the soil, it is so soft that it can readily be cut with any iron instrument, such as a knife, and is easily raised in masses with a pick-axe, after which it is cut with a trowel into pieces fit for building, which by exposure to the air become equal in hardness to the best bricks, and are used in all buildings, even such as are under water, as a most durable and excellent material. The parts of this stratum that are exposed to the air assume the appearance of a black rock, containing numerous small cavities as if it had undergone the action of fire, and which is extremely sterile.

Iron ore abounds in almost every part of the south of India: the most common is in the form of black sand, which is found pure in the channels of torrents, or is procured by washing it from beds of clay with which it is intermixed.

By

Art. 39. The contracting parties will admit other German princes and states into the alliance, when it shall be found suitable to the common interest.

Art. 40. The ratification of this treaty shall be exchanged at Munich on the 25th of July.

Signed by the Plenipotentiaries of the
Paris, July 12, 1806. Contracting Parties.

The instrument of the act of ratification was signed by the emperor at St. Cloud, on the 19th of July, and countersigned by the minister Talleyrand and the secretary of State.

Hessia is said to have since joined the alliance with a contingent of more than 20,000 men.

It is said to be understood that the minor states shall abandon the rights of sovereignty, such as a mint, the raising of troops, &c. It is added, that a similar confederation is formed on the north of the Meyn, by the king of Prussia, which should of course include Hessia, and the accession of this power to the southern league has not been confirmed, and may be only temporary. Thus the division will correspond with that foretold in the first edition of this work, save only with the unfortunate loss of the Austrian influence, which, to the lasting destruction of all balance of power, has been transferred to France.

No. V. *Remarks on the Russian and Spanish pronunciation*, &c.*

THE confusion so frequently met with in books and maps, from the mode of expressing Russian proper names, arises principally, if not entirely, when otherwise any degree of accuracy is attended to, from this circumstance:—the Germans render the third letter of the Russian alphabet *vedi*, which is precisely the Latin or English *v*†, by their *w*, as having the same sound; pronouncing *was wollen wie*, as we should *vas vollen vie*; and accordingly, on their first coming to England, they naturally say *vat vould ve*, instead of *what would we*. Now is it well known that most of the maps and books concerning the geography or history of Russia, used in France and England, are translated from the German; in which the translators, adhering strictly to the letter of *their* original, render the words, especially in our language (for the French having no *w* may give it what sound they please), totally different. What a different sound, for instance, in English have *Mohilew*, *Tambow*, *Tschernigow*, *Charkow*, *Okzakow*, *Saratow*, *Kiow*, *Wolga*, *Newa*, *Newski*, *Orlow*, *Dashkow*, &c. from *Mohilef*, *Tambof*, *Chernigof*, *Kharkof*, *Otchacof*, *Saratof*, *Kief*, *Volga*, *Neva*, *Nefski*, *Orlof*, *Dashkof*, &c. as they are spelt and pronounced in Russian. The Rev. Mr. Smirnove prefers rendering this termination by *ove*, *Tambove*, *Chernigove*, *Dashkove*, *Orlove*, &c.; and his opinion ought to have great weight, as that of a gentleman, acquainted with both languages. However the difference between us is nearly if not quite none at all: and I adopted the *of* after the Rev. Mr. Coxe, and many other respectable names, only for the sake of simplification, and because to my ear it is the better English termination of the two. At any rate the totally different German orthography ought to be for ever exploded from all English maps and writings—The Polish and Hungarian *c* and *z*, copied by the Germans, have likewise, in an inferior degree, added to the perplexities; *czar* for *tzar*, *Czernichew*, for *Chernichef*, *czarowitz* for *tzarevitch*, *Petrowitz* for *Petrovitch*, &c.

The following are a few geographical terms:

Ocean—*Okeáne.*

Sea—*Morè*; *Tikoë morè*, the peaceable or Pacific sea,
Tschernoë morè, the black sea.
Sredizemnie morè, the midland sea, Mediterranean.

Lake—*Ozero*; *Bielo ozero*, the white sea; *Ladogskoi ozero*, the Ladoga lake.

Cape or promontory—*Noss*, signifying likewise the nose; as does the *Nase* of Norway.

Strait—*Prolife*; *Veygatskoi proliva*, Veigat's straits.

Gulf—*Zalife*; Bay—*Zalife*; Creek—*Zalife*; } *Zaliva Phinskago*, the gulph of Finland. Only one word for them all.

River—*Reka.*

Mountain—*Gora.*

Hill—*Gorka*, the diminutive of *Gora.*

Valley—*Dolina.*

Forest—*Less* (pron. *Lyess*),

Desart—*Puslyi.*

Plain—*Dolina*: also *Rovnina*, and *Glade.*

Peninsula—*Poluostrof.*

Island—*Ostrof.*

Rock—*Kamen.*

City—*Gorod*; *Novgorod*, New city; *Staragorod*, or *Bohem Stargard*, Old city.

Town—*Gorodok*, the diminutive of the foregoing.

Nation or country—*Narode.*

Native country—*Rodina* or *Otêcheslvo.*

Region—*Strana.*

Kingdom—*Korolevslo.*

King—*Korol.*

Climate—*Klimatt* (evidently borrowed.)

Earth—*Zemla*, (pron. *Zeml ya*,) *Novazemla*, New earth; like Newfoundland.

World—*Svet*, (pron. *Sv. yet.*)

Province—*Provintzia*, or *Guberniya.*

Territory; district—*Uyesd*; *oblast.*

* For those on the Russian the author is indebted to the Rev. Mr. Tooke.

† Or *f* in the word *of*, e. g. coat of arms; man of war, &c. where the *f* is neither more nor less than a *v*.

Isthmus—*Istm*, also *perescheek*.
Sound—*Sund: Nutka-sund.*
Volcano—*Ogneduischutschaia gora*, (burning mountain.)
Whirlpool—*Puchina.*
Haven—*Gavane.*
Port— } The same.
Harbour— }

From Mr. Tooke's information it likewise appears, that the common termination *skoy* is merely an adjective possessive or appellative; as *Finskoy*, Finnish; *Imperatorskoy*, Imperial, &c.: So the Aluetskoi, the Aleutian islands, &c.

A few remarks may also be offered on the Spanish pronunciation, from Dobrizhoffer and others.

Ch is pronounced as the German *tsch* (or *ch* in our church;) so *mucho*, *Chili*, are *mutscho*, *Tschili*.

X and *J* are sounded gutturally like *h*; as *mujer*, *muher*; *jamas*, *hamas*; *Ximenez*, *Himenez*. In the sound of *x* our author seems to err, for it was uniformly put by the Spanish in expressing foreign words, as *sh*; thus *Xah* is *Shah*; *Xoa* is *Shoa*; *Xerez* is *Sherez*, &c. &c. The sound of *x* as a mere *h* seems a provincialism, or a recent affectation. *G* before *e* or *i*, is sounded as *j* or *h*.

ç is precisely equal to *z*.
Ll as *li*; thus *colmilo*, *colmilio*.
n as *gn* in French; *Espana*; *Espannia*.
qu as *k*.

Link, and his ingenious translator, present some remarks on the Portuguese pronunciation. The Portuguese do not use the *i* after *t*, &c. as *tierra*, *terra*. The *ch* is pronounced as in French; and both the *j* and the *x* like the French *j*. The final *ao* is sounded *aung*; and the final *m*, which is frequent, like *ng*. The *n* between two vowels is changed to *nh*; thus *vino* becomes *vinho*, pronounced *veenyo*. The Portuguese is averse to the *l*; hence the articles *lo*, *la*, become simply *o*, *a*, this *o* being pronounced as *u*.

No. VI. *Value of Coins used in common Calculations.*

	French Money. Frs.	Cents.	*Sterling.* £.	s.	d.
A Florin of Germany, -	2	20	0	1	10
——— Austria, -	2	65	0	2	2
Rix Dollar of Prussia, -	4	—	0	3	4
Dollar of N. America, -	5	40	0	4	6
Guinea of England, -	25	—	1	1	0
Rix Dollar of Denmark,	5	70	0	4	9
Piastre of Spain, -	5	30	0	4	0
Florin of Holland, -	2	20	0	1	10
Lire of Italy, -	—	85	0	0	8½

	French Money. Frs.	Cents.	*Sterling.* £.	s.	d.
A Scudi of Rome, -	5	53	0	4	7
Ducat of Naples*, -	4	30	0	3	7
Rouble of Russia, -	4	5	0	3	4½
Rix Dollar of Sweden,	5	80	0	4	10

The common large tables of Coins are not only uselessly prolix, by including those never mentioned in books of history or travels, but present many antiquated names and values, and are in other respects often grossly erroneous.

No. VII. *Extracts concerning the Chinese War in Little Bucharia, 1755 to 1759.*

From the Histoire Generale de la Chine. tome xi. Paris 1780, 4to. p. 550, &c. *This Work being rare and expensive, the following brief Summary of that remarkable War, which so much enlarged the Chinese Empire, may be acceptable, especially as it presents every Circumstance which can illustrate the obscure Geography of an interesting Country.* (See page 564.)

SINCE the accession of the present, or Mandshur, dynasty, the chief wars of the Chinese have been with those Moguls called Kalkas, who dwell towards the rivers Kerlon and Tula. These tribes being at length subdued, and the family of the Kaldan, or sovereign, extinguished or forgotten, a new vicinity produced, as usual, a new enmity, and the Chinese arms were directed more to the west. The throne of the Eluts was contested by Debatchi, (called by the Chinese Taoua-tsi,) and by another chief named Amoursana. The latter was forced to withdraw, and seek refuge in the Chinese court at Geho. The kings of the Eluts used to reside on the river Ili, where a city has since been built by the Chinese; and though chosen as a place of exile, was greatly increasing in population.

Kien-Long, the Chinese emperor, wished to avoid a distant and expensive war against the Kalmuks of Soongaria, also called Eluts by the Chinese, but being irritated by the disrespectful conduct of Debatchi, he undertook this war in opposition to the advice of all his councils. In the beginning of 1755 Amoursana pro-

* A German ducat is about 9*s.* 4*d.*; the dollar 4*s.* 8*d.*

ceeded

original documents are so barren in regard to Spanish wool.

Vol. II. p. 25. Our author Balducci was a merchant of no small note. In 1315 he obtained privileges for his country from the Duke of Brabant, and in 1327 from the King of Cyprus. In 1317 he was agent or partner of the great company of the Bardi, in Flanders, who then sent him into England. In 1340, when he wrote his book, he must have been full of years and experience.

P. 38. In 1439 the republic of Florence granted the use of its galleys to the consuls or chosen chiefs of the wool trade, to go to England and Majorca for wool, " because offerers having failed it was feared that wool would be wanting, a manufacture which yielded more profit to the city than the others."

P. 49. Uzzano mentions that in 1402 there was a consul of Florence resident in London. His fees, p. 50., were one penny sterling on every pound in exchange, three-half-pence on merchandise, one penny one eighth on insurances, and ten pounds sterling for every loaded galley.

P. 60. The galleys of the republic passed to England in 1425.

P. 64. Villani, in his curious history of Florence, XI. 43. says that before 1338 the wool of England was little used, because the weavers had not skill enough to work it, so that the clothes were coarser and of less value.

P. 65. Dei, in his Chronicle, 1472, mentions London among the chief seats of the Florentine trade. He also mentions thirty-three great banks at Florence.

P. 67. Villani states the terrible bankruptcies that ensued, because Edward III. king of England, engaged in French wars, did not pay his bankers. The firms of Peruzzi and Bardi failed for 1,363,000 florins of gold, the price of a kingdom, says Villani, XII. 54. 56. It may be doubted, if Edward III. was an honest man: if the luxurious Edward IV. had been dishonest, the house of Medici would have been ruined. Another extract of Villani, p. 68.

P. 70. Rymer is quoted for the importance of the Frescobaldi in England, 1304; but every English writer on commerce will of course use his work, which is familiar to our Italian author upon many occasions.

P. 71. Lorenzo de Medici (the Great) must have been very young if the date of the contract be 1462, as put by the author. (*For* Porlinari *in this work read* Portinari.) The Bank of the Medici, *Banco dei Medici*, was surety in a treaty between England and France, p. 72.

P. 98. *seqq.* The slight woollen cloths called *Kalimala* were made in England, France, Flanders, Brabant, and Spain, whence they were brought to Florence in order to be *milled* and more highly lustred. The academicians Della Crusca cannot explain the *panno melato* of Villani. It is *milled* cloth.

P. 135. The course of exchange and the term allowed (75 days between London and Florence) are explained by Balducci and Uzzano; but I cannot find the days of arrival and departure of couriers, mentioned by the author.

P. 137. The rate of interest exacted by Florentine bankers in France, &c. was *twenty* per cent., sometimes *thirty* or *forty*, whence they were often in detestation and danger, as amply explained by the author. But the house of Medici made so good an use of their money that it would be invidious to inquire how they got it.

P. 144. Flanders was the grand mart where all the merchants of Europe crouded as a central situation.

P. 151. Among the causes of the decline of Florentine trade, the author places the manufacture of English wool begun in England by the firm of Lorenzo and Giuliano de Medici, soon imitated by the natives. Is it to Portinari and Guidotti that we are indebted? One partner is called by Comines *Guerard Quanvese*: perhaps of the banking house of Quaratesi, (p. 307.) and his name Geraldo Quaratesé. The bank of Portinari is mentioned by Dei in his strange letter (p. 241.) as among the chief in Florence.

P. 291. In the very curious instrument for the delivery of the jewel called the Fleur-de-lis of Burgundy, 1498, it is redeemed by 4000 florins of gold and *three hundred and twenty* hundred weight (*centinaja*) of Coteswold wool, *fine lane Contisgualde d'Inghilterra*, to be delivered at Florence by the first ships. The quantity is afterwards expressed by *migliara trentadua*, thirty two thousand pounds. If this wool be not procured it is to be commuted for five thousand florins of gold. The parties are Frescobaldi of Bruges for Philip Archduke of Austria, and the Portinari, who had it in pledge.

P. 306. Among the merchants of Florence 1469, is mentioned *Giovan Bonaparte*, probably an ancestor, as the family passed from Florence to Corsica.

Vol. III. p. xx. Balducci prefixes a little vocabulary of mercantile words. *Brisciata*, he says, implies that the wool is picked and more valuable than by the fleece. *Fondaco* is the Tuscan *bottiga*, a shop. Correct p. [65] l. 2. from bottom, the Italian editor having put *Fondaco* as the name of a town, while Balducci speaks of carrying wool to and from *the shop*, where it was lodged on its transit to Spain. He says that *fondaco* also means *mercato* or *piazza*, a market-place.

P. 57. From the articles sold at Alexandria and the Catalogue of *Spezierie*, p. 295. it appears that scarcely an article of grocery or pharmacy has been added to our stock since 1340. A remark which may surprize many readers, as it did myself. The kinds of sugar are even more numerous.

P. 90. In the trade between England and Cyprus, 21 rolls of Cyprus equal a hundred weight of spices in London; 60 *cafisoi* of any corn, a London *quarter*; $2\frac{1}{8}$ ells of London, one *canna*; a mark of silver tower-weight yields a mark and seven pennies; a hundred weight of tin, or 112 London pounds, equal 22 *ruotoli* 8 *occhie* of Cyprus, there being 12 *occhie* to the *ruotolo*.

P. 130. In describing some articles of trade he says the tin of Cornwall is originally in oblong squares, (his figure resembles a shield,) but is melted into bars at *Majolica* and Venice. The trade with Majolica or Majorca is given at great length, ch. 25. It seems to have been a mart for a great part of Spain. The wool

wool of England paid one *soldo* a cwt.: that of Garbo foul or washed two *danari* each *cantaro*.

P. 148, 149., an estimate of the comparative value of English and Venetian money, a long and dry table.

P. 198. Terms of exchange, Florence and England, 75 days; Flanders, 70; Provence and France in general, 2 months; Majorca, 2 months; Spain, 2 months; Cyprus, 3 months; Tunis 6 weeks, &c. The trade with northern Africa before it became a seat of piracy, is curious and interesting.

P. 200. Agency of exchange; *senseraggio di cambiora*. Ten *soldi*, or 100 marks of England *assalvi in Terra;* 20 if a *rischio di mare e di gente*.

P. 207. (Trade of Florence) table of English and Florentine money, according to the course of exchange.

P. 226. London and Genoa: 142 pounds G. = 100 L. 2¼ *mine* of grain = London *quarter;* a sack of London wool of 52 *chiosi* = 500 pounds of Genoa.

P. 227. Table of English and Genoese money.

P. 249. London and Bruges in Flanders: 100 lb. B. = 92 ½ L. &c. Cornish tin the thousand weight costs for freight, customs, &c. 6s. 8d. sterling.

P. 260. London trade already given. A present was made to the clerks of the custom-house, for the coquet, *cocchetto;* that is, says he, for a paper sealed with the seal of the custom-house. The king's customs are blank in the original.

P. 261. London and Caen. In the original, *Cano in Normandia;* in Balducci's table of the contents, *Canmo*. The French pronounce *Canne*.

P. 263. List of religious houses that supply wool. The Italian passage mistaken by the editor should be read thus: *Balle di Rucco, Guldinghamo, Ghelzo, Norbonucche, Sansasano, Grideghorda, al tempo di Brarendocca come vengono dalla falda, e cogliette, furono venduti in Fiandra al sopradetto anno cioe*(sic)... *da mar.* 9 *insino in* 10 *e mezzo, il sacco, siccome* [di] *Simolia e Bellebe ricevute dalle dette magione:* that is, "the bails of Rucco, (Roxburgh?) Coldingham, Kelso, North-berwick (Norborruche,) Sansansano, and Grideghorda, in the time of Brarendocca, (a former agent or writer,) as they came from the fold, and the gatherings were sold in Flanders in the said year (left blank), from nine to ten and a half marks the sack; as well as those of Simolia and Bellebe, received by the said houses."

P. 284, &c. Value of milled cloths, *panni mellati*, made in various towns of Flanders, &c. No mention of England.

P. 300 and last. Mention of salted herrings, *aringhe insalate*, caught in the sea between England and Flanders. To be chosen as salted the same year, large and broad backs, skin of a good reddish colour, and of a good smell of herring. Behold salt herrings no novelty in 1340, before the supposed invention!

Vol. IV. preface, p. xvi. The Mediterranean has subsided, and there is no longer a port at Aiguesmortes, no more than at Ravenna, Porto Pisano, Damietta.

P. 1. Uzzano begins with the *customs* paid at Florence, 1442. English wool, foul, 1 flor. 16 *soldi* the cwt.: English lamb's wool, 3 *lire* 4 soldi. Washed, a third more. Wool of Minorca and Majorca far less. No mention of Spanish, except Majorca were the mart. Blankets of Guilford (Giuforte), one *soldo* the ell. Among the furs, p. 9, lambs' skins of England, dressed and prepared, 16 *soldi* the 100. Unwrought tin, p. 24, the cwt. 1 *lira* 8 *soldi*.

P. 54. Customs of Pisa. Lambs' wool of England, cwt. 1 l. 5 soldi.

P. 80. Customs of Sienna. French or English wool the horse-load, *soma*, foul, 6 *lire:* of Majorca, 3: Provence or Barbary, 1 l. 10 s.

P. 86. Customs of the port of Telamona. Wool of England, or of Flanders, washed, *soma*, 1 l. The same, and of Burgundy, Berry, or France, foul, 10 s. Washed wool of Garbo, Catalonia, or Provence, 10 s. Lambs' skins of England, France, or Flanders, 10 s., from all other parts, 5 s.

P. 126. Export of wool from London to Valentia. *Fondaco* means a shop, as already mentioned. The little details of expence are not interesting.

P. 129. Trade of Bruges. Noble of England worth 76 Flemish groats.

P. 133. Prices of furs at Florence. Lamb-skins of Valentia, 10 to 11 florins the 100 of 110; of Scotland 12 to 13 fl. the 100 of 110 or 112.

P. 134. Rates of exchange. Genoa and London, florin passes at 38 to 40 *sterlini*, as the exchange runs. Florence and London, florin is 36 to 38 *sterlini*. Venice and London, p. 138, ducat about 38 *sterlini*, Bruges and London, crown 22½ *sterlini*, or thereabout.

P. 147. Agency (*senserie*), London by Flanders, 6 pennies on 100 crowns.

P. 167. Tarif of the florin established at Florence, 10 September, 1425. Noble of England, by weight, 3 *denari* on the florin. Noble weighs 6 d. 4 to 6 gr.

P. 178. Among the cloths esteemed at Rome, those of Cotteswold have been mentioned: colours, dark grey, azure, sky-blue, milk-white, scarlet, dull green, 18 pieces 16 florins. Those of Perpignan, Brescia, Languedoc, Toulouse, &c. are next mentioned. Then follow those of *Lodolo*, certainly English, (Ludlow?) and the *Secchesi*, also English.

P. 179. The largest bark which can mount to Rome is of fifty tuns. The cloths of Cotteswold cost 24 *bajocchi* the piece, to bring to Rome; those of *Vervi*, (Derby?) 41½ *bajocchi;* agency 1 per cent. on the sale. Two ells of *Secchesi* form a canna of Rome: price, 1 to 1½ ducats the *canna*.

P. 180. Prices at Pisa. *Secchesi* sold 9 to 10 florins the pound, *libbra* (corrupt?) Cotton cloths of Perugia, (*Banbagi.*)

P. 181. Counterfeit Ludlow cloth sold at Pisa, *Caricatura de' panni di Lodolo*.

P. 193. The commerce with Tunis and other African states is not a little curious, but foreign to the present purpose. The piracy is modern, and has been recently chastised; but we forgot the only security for such a treaty, — hostages.

P. 199. A complete and long Periplus is presented of the Mediterranean Sea, and part of the Atlantic, beginning at Cape St. Vincent. It occupies eighty close pages in quarto. The volume closes with a list of lucky days, and the art of chusing precious stones.

The Author's absence from the press has occasioned the following Errata :

Vol. I. p. 67. l. 11. from bottom, *for* Falconissi *read* Falconieri.
l. 4. *Ardonna* read *Ardenna.*
Note, read *Gravezze imposte.*
68. l. 3. read *Novello luogho.*
4. read *Ticifeltro.*
12. *read* Pegolotti.
17. *for* incenei *r.* incense.
29. *medoglii* r. *medaglie.*
68. l. 5. from bottom, *for* Como *r.* Camo.
3. f. b. *r.* Aiguesmortes.
Note, read *Spezierie.*
[59.] *read always* Limborno (and Aiguesmortes.)
Note, last line, *dette magione.*
[60.] l. 2. Nio Mostriere.
10. (Smirched ?)
27. Nietta.
13. f. b. Bellau l. 11. Letteleccia.
[62.] l. 6. f. b. Giutebi.
[63.] l. 6. Marchebi. 15. sor Tratta.
19. Chirbebi. 26. Tornai.
23. Sanpiero.
[66.] for Porlinari *twice read* Portinari.

Carefully collated with the Originals this 8th October, 1817. J. PINKERTON.

P. [64.] l. 5. f. b. So the text, but there must be some mistake (see p. [66.] l. 4.) : the editor having read 12 for $1\frac{1}{8}$. Perhaps for *ell* we should read *piece.* Or from p. [65.] l. 8. f. b. $1\frac{1}{2}$, which might lead to the mistaken 12.

Page 175. l. 4. *for* manners *read* meanness.
511. *last line,* Arriani Per. Steuchii.

Supplement to Vol. I. p. 760. col. 2. l. penult. *read* four wheels.
last note, *read* scritta . . . . *stesso* . . . . *eccitano.*
762. c. 1. l. 21. *for* right *r.* night.
c. 2. l. 33. *read* always Ireland.
766. c. 2. l. 9. and 17. *read* Alicnunda.

Supplement to Vol. II. p. 783. col. 2. l. 10. from bottom, read *vellera.*
787. col. 2. l. 6. *read* grand features.
788. col. 2. l. 1. *read* de Siberie.
3. la Borde.

LC Fre 31

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